

ITEMS OF INTEREST.

VOL. XVI.

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ORIGINAL COMMUNICATIONS.

SOUTHERN DENTAL ASSOCIATION.

*Reported by Mrs. J. M. Walker.**

HYGEIA HOTEL, OLD POINT COMFORT, VA.,

August 2d to 6th, 1894.

The Southern Dental Association convened in twenty-fifth annual session, Thursday, August 2d, 1894. The President, Dr. B. Holly Smith (Baltimore, Md.), presided. Dr. W. H. Morgan (Nashville, Tenn.), opened with prayer.

Dr. E. P. Beadles (Danville, Virginia,) delivered an address of welcome on the part of the Virginia State Dental Association, as follows:

Mr. President and Gentlemen of the Southern Dental Association:

I am before you as the representative of the Virginia State Dental Association, to extend to you a welcome from your Virginia brethren of our common and well-beloved profession.

I am here, however, only as a substitute. I am in another man's place. This, of itself, is embarrassing. No two men fit the same place. I am both too short and too narrow to fill the space I am trying to occupy. The man selected to give a word of welcome at this hour, is well known to you all. For more than half a century he has been helping, by mighty efforts, to upbuild and strengthen the dental profession. In our annual meetings his voice has been often heard; in many of the journals the results of his pen have been read by dentists all over the land. He was Vice-President of the great Columbian Dental Congress. He has been President of your own honored Association. He has filled every position to which he has been elected with honor to himself and credit to his State. He is a true type of the old Virginia gentleman. I refer to our beloved friend, Dr. W. W. H. Thackston.

In the language of my friend Crawford, of Tennessee, I wish you to shake the hand of the Virginia dentists through me to-day, and feel that our hearts are in the grasp. We welcome you, our friends from the North,

* Having contracted to publish the proceedings of the Southern Dental Association, only on condition of "editorial revision at our discretion," we assume the full responsibility for all omissions and revisions in both papers and discussions, made by us in the almost verbatim report furnished us by Mrs. J. M. Walker, official reporter for the Southern Dental Association.—Ed. ITEMS OF INTEREST.

because to know each other better will make a closer friendship ; we welcome you, our friends from the West, because we wish to imbibe some of your vim and energy, that we may go on to greater things ; we welcome you, our friends from the Pacific slope, beyond the Rockies, that you may compare the ever-rolling Atlantic with the peaceful waters of your own great ocean ; we welcome you, our friends from the Southland, because you are our brothers, bone of our bone, and flesh of our flesh. Let us all join hands in the work to be done here, and make this meeting a success.

"Welcome" is a magic word to Virginians ; we have heard it from the time we began to lisp at our mother's knee, and have been taught that the stranger within our gates is always welcome. Well do we know that our hospitality is not what it once was ; changed circumstances have produced this ; but, my friends, the *desire* is still within our hearts, and if we do not measure up to what we would like, it is from inability, and not from lack of desire to give our friends a royal welcome.

We are proud to have you with us. Enjoy yourselves. You are on historic ground. Near here—just there on the winding James—stand the remains of the first settlement of Englishmen on this great continent. Here the dusky maiden of the forest saved the pale-faced chief from a tragic death. There in Hampton Roads is the place where one of the most heroic battles was fought, ever engaged in by man. In this fort was imprisoned that great chieftain, the President of the late Confederacy. We hope you can here find food for both mind and body ; and when you leave these shores, where the music of the wave is ever heard, and where every breath is laden with invigorating health, we hope you will feel fully repaid for having come.

Again, my friends, I bid you welcome, and hope that you will carry away many pleasant remembrances from this meeting. I am sure we will cherish the same in our hearts after your departure.

The President, in his address, recommended :

1st. A closer union between the Southern Dental Association and the State Societies.

2d. A uniform standard of the State Examining Boards.

3d. An assumption by the Southern Dental Association of the leadership in dental questions.

4th. The coöperation with other societies and of examining boards in the drafting and bringing about the adoption of a uniform dental law.

5th. The adoption of a definite standard of preliminary education for dental students.

6th. An official censor of clinics.

7th. A commission of dentists to pass on the merits of new inventions and on mooted questions and practices.

[For the President's address see extended proceedings.]

August 4th, the Auditing Committee reported :

We have examined the books and accounts of the Treasurer and find them correct.

W. R. CLIFTON,

JOS. R. WOODLEY.

Auditing Committee.

A petition was received from a gentleman from Washington City desiring to become a member of the Association, but whose

presence was prevented by the sudden illness of his wife. Action was deferred in hope he would be present later.

Dr. H. E. Beach, Treasurer of the Association, presented the following report:

To balance on hand last report.....	\$290 27
By cash paid out as per vouchers.....	144 23
	<hr/>
Cash on hand.....	\$146 04

This does not include receipts of dues for the present meeting.

The report was accepted and ordered published in the *Transactions*.

Dr. J. Y. Crawford described Dr. Gordon White's new circular saw as a valuable adjunct to the operating case, which all would do well to secure. It is designed for finishing proximal fillings, and works well between the teeth.

The question was asked whether these appliances had been presented to the Association or were merely a part of the stock-in-trade of the dental dealers? Dr. Crawford and Dr. Sill replied that they had been on exhibition where all could see them, and that many had been in use at the clinics.

Dr. J. Y. Crawford moved a vote of thanks to the dental dealers for their liberality in furnishing supplies and offering opportunities of testing the merits of the new appliances, with an acknowledgment of their merits. He wished especially to express the appreciation of the clinic committee of the liberality of the S. S. White Dental M'f'g Co. in supplying furniture, etc., for the clinics, they having charged the committee only for what was absolutely used. The usual difficulty had been experienced in getting clinicians to be on hand with their own instruments and materials. Another difficulty had been that clinics had been attempted by some who were not competent to clinic before such a body of men as the Southern Dental Association.

Dr. McKellops said it always gave him pleasure to attend properly conducted clinics, but that everything should be in perfect order and readiness, so that a man shall be in proper condition to give a clinic that shall be instructive to all who witness it. The operator himself should be in perfect condition, too, with his hands and his finger-nails clean. We have strangers among us and they notice these little things. He said: I travel about a great deal, and I notice everything. I have developed a new bump of phrenology—*brass-facedness*. I pry into everything, and I like, when I go into a man's office, to find everything in perfect order, and not a lot of instruments that look as if they had not been cleaned for months. My office is always open to inspection. Some of my instruments are very old, but they always look as good as new. I

do not go into all this new-fangled business of boiling in soda, etc., a little soap and hot water suffices, but I have every instrument in perfect condition, especially for cleanliness. I saw some things in the clinics that were splendidly done. If you want to do some thing that will be to your credit use platina-gold, No. 3 shade. It is something that cannot wear out, and in color nearly a match for the tooth. It beats any inlay ever made, and is no more trouble to use than gold. Williams was about to give up making it, there was so little call for it, till I begged him to keep it up. Our Society has had a hard struggle for existence, and I am proud of what we are now doing. Let our State and local societies make a specialty of clinics, and then when we come here we will be prepared to do it better. But we don't want any quack nostrums. Let the master of clinics rule everything of that kind right out.

CHLOROFORM.

Dr. Hewitt was given the floor to reply to the remarks made on his method of administering chloroform.

Dr. Hewitt: My experience has been that the influence of chloroform given in the manner I described is very efficient in holding pain in abeyance, and yet is absolutely without danger. While deaths occur almost daily in the great hospitals from anesthetics, no one asks whether death results from the knife or from chloroform. I congratulate you on your conservatism, which is infinitely above that of the general surgeon. The medical man is assumed to be above criticism, and how often healthy, beautiful girlhood succumbs to the murderous exhibition of chloroform. I protest against the administration of chloroform to full anesthesia for any operation that the dentist has to perform. I am not talking to school-boys; I am talking to men infinitely above me in education and acquirements. I am but an humble dentist in private life, but I love my fellow-men. I love the fair-haired baby girl who comes to my office all pale and trembling, and begs, "Don't hurt me." I know I can use chloroform, that dreaded drug, as safely as cologne. There is much in dentistry that is necessarily painful, and if there is any method by which pain can be held in abeyance it should be adopted by us.

Why is there so much danger, and so many deaths from chloroform? Because the surgeon insists on the prone posture. The vapor of chloroform is, as we all know, heavier than the atmosphere, and when the sponge saturated with chloroform is held over the face the whole of that vast amount of limp surface is no longer exposed to the pure atmosphere, but to that heavy chloroform vapor which excludes all air.

But for dental purposes, by my method, I have the patient erect and inhaling the vapor from a small vial held an inch and a-half away from the nose; the vapor that falls does not enter the lungs, and I insist that it is absolutely safe. I know of no operation more severe than the crucial incision made in opening a carbuncle, but I have done that by my method; and the patient was able to put pressure on a carbuncle on the back of the neck and say it did not hurt. What better proof do you want than that? It is not necessary, because death has ensued from chloroform administered in a reckless manner, that we should not use it at all. Morphine and strychnia may produce death, and yet they are prescribed every day.

Dr. Friedrichs: If all this is true, then why is it that a State which contains such a great university of learning, with a medical department, as Massachusetts, should have found it necessary to pass a law making it a penal offense for even an educated surgeon, a graduate in medicine, to use chloroform for anesthetizing purposes?

Dr. Hewitt: That has no reference to my method, in which there is no danger.

Dr. Friedrichs: Are you the only one that practices that method?

Dr. Hewitt: It has been stated here that a certain physician employed this method in having his own teeth extracted, but so far as I know I am the first and only one to publicly advise this method, but I claim no credit for it as it was entirely an accidental discovery. I wish I could clothe it with a scientific halo, but I cannot.

Dr. Friedrichs: That there is any method by which chloroform can be administered with absolute safety has been refuted by medical authors time and again. Dr. Friedrichs here cited the case of a woman who had taken chloroform for surgical operations 200 times, and finally was killed by it like a stroke of lightning. Another case where a surgeon had administered chloroform to a certain patient a number of times and considered him a perfectly safe case, and yet, with his class around him, when for their benefit every organ had been examined and no risk thought possible, yet the patient expired in spite of every known means of resuscitation.

Dr. C. N. Peirce: There is no case on record of a suicide by chloroform in the upright position. In many cases of neuralgia relief is obtained by slight inhalations of chloroform while sitting in the chair. One patient always brings her own bottle of chloroform, and putting a few drops on her handkerchief renders herself quite insensible to pain. I don't believe there is any danger in

using it in that way; so many within my knowledge use it with impunity in that manner.

Dr. John S. Marshall: And yet there are those whose idiosyncrasy is such that one drop of chloroform will cause serious consequences. I will give you a personal illustration. My wife, before our marriage, wrote me that she was suffering from toothache, and asked my advice as to whom she should go to for relief. I advised her to call on my old preceptor. He examined the tooth, and placed in the cavity a pellet of cotton, not larger than a pea, saturated with chloroform. In less than half a minute he had to call for help, and she very nearly died. If two or three drops had been used there would undoubtedly have been a dead girl in that office.

Dr. Hewitt, by his method of inhalation from the vial, does not produce anesthesia, and yet he says the patient experiences no shock from operation. I think he would find his mistake if he undertook any serious operation. Chloroform is dangerous, and yet I use it very frequently, and even on little children. It is easier to manage and less liable to produce bronchitis than ether. I have never had a death from it, but I have been very close to it in a case of staphyloraphy for a child of two years old at the St. Luke's Hospital. We had three internes at that time. One administered the anesthetic, while the others assisted me in the operation. The chloroform was administered on a little wire cup covered with canton flannel, chloroform being dropped on that, one drop at a time, from a drop bottle. The assistant, getting interested in the operation, unconsciously lowered the cup too close to the child's face, and I noticed the lips of the patient turn pale; I found respiration had ceased. I immediately held the child up by the heels, and by means of artificial respiration, and giving two or three drops of nitrate of amyl on a handkerchief, the baby sighed, and I said, "Thank God, the child is not dead."

Chloroform is dangerous, and particularly so for dental operations. We have no right, under any circumstances, to administer chloroform to a person sitting in a chair. For dental operations I prefer nitrous oxid or ether. If chloroform is insisted on by the patient for the extraction of teeth, I say to the patient, "I will go to your house, and I shall expect to find you in bed, undressed, with a rubber sheet under you." Under those conditions only will I administer chloroform for the extraction of teeth, and in that way I avoid the danger from syncope and perhaps death. I don't like to give chloroform, but I do not refuse to give it (except in known case of albuminuria, where I cannot use ether). For excision of the maxilla and other capital operations about the

face you must use an anesthetic, and you must choose the method involving the least risk for the patient. I say again, the dentist should never administer chloroform to a patient sitting in a chair. Dr. Peirce and the gentleman who spoke from the platform, by the method they describe, do not anesthetize the patient, but I am speaking of cases where full anesthesia is required.

Drs. J. Taft, J. Y. Crawford and B. H. Catching were appointed to report on the recommendations of the President's address. The following report and discussion resulted :

Mr. President and Gentlemen of the Southern Dental Association :

Your committee, to whom was referred the opening address of your presiding officer, would report that a careful perusal of the paper impresses us with the value and importance of many of the statements there presented, and we would suggest that an hour could not be better employed than in the consideration and discussion of at least some of these subjects, and we would especially direct your attention to the following particulars :

1st. The duty of our National Associations toward our State, District and Local Societies.

In what way and to what extent is such aid and assistance practicable?

In what way can a more intimate and closer relationship be established?

2d. The power and efficiency of State Examining Boards, for good to the profession.

What work can reasonably be delegated to them?

In what way can they best serve the greatest good?

3d. Uniformity in laws regulating the practice of dentistry.

How can uniformity be secured?

What benefit would accrue from such uniformity?

4th. To what extent is it practicable for our National Associations to influence beneficially dental education?

5th. What can our National Associations do to aid in the settlement of mooted points in practice?

Is a commission for such purpose practicable?

6th. What changes should be made in clinical demonstrations, to secure better results than hitherto?

Can clinics be employed to advantage in all classes of dental societies?

7th. Can commission be profitably employed for the investigation and the ascertainment of truth on assigned subjects?

With what authority should such a commission be invested?

The above points are prominent in the address, and we deem them worthy of careful consideration.

J. Taft,

B. H. Catching.

The minutes of the last annual meeting, held in Chicago, were read by the Secretary and approved.

The courtesies of the floor were extended to all members of the Virginia State Dental Association and to all visiting dentists.

The following were made active members : J. W. Boozer, Columbia, S. C.; S. H. McKee, Americus, Ga.; J. E. Frazier, Birmingham, Ala.; C. V. Rosser, Atlanta, Ga.; John S. Marshall,

Chicago, Ill.; I. N. Carr, Tarboro, N. C.; T. B. Welch, Vineland, N. J.

The following were reinstated, on payment of two years' back dues: T. H. Parramore, Hampton, Va.; Wm. Crenshaw, Atlanta, Ga.; W. H. Morgan, Nashville, Tenn.; J. R. Woodley, Norfolk, Va.; F. H. McAnally, Jasper, Ala.; H. D. Boyd, Troy, Ala.; D. E. Everett, Raleigh, N. C.; D. N. Rust, Alexandria, Va.

Dr. W. H. Morgan: I am glad to be reinstated in this old Association. There are only three of us here who can tell the story of its organization from our own knowledge. I am mortified to find myself behind with my dues, as I was the first one to sign the Constitution of this Association. I am glad to see the old members coming back. We "bulted better than we knew."

Dr. B. H. Catching: There are but few charter members of the Association surviving, after the lapse of a quarter of a century. I move you, sir, that as an honor to which they are entitled, all charter members be exempt from further payment of dues. Seconded and carried with applause.

Dr. Geo. J. Friedrichs: As one of the charter members of the Association, I appreciate the honor intended; but I have paid my dues for twenty-five years, and as long as I am able to be present among you, I hope to continue to pay my dues.

Dr. Crawford made the sessions for clinics prominent, and hoped they would be popular and useful.

THURSDAY, August 2d, 3 P M.

The special committee appointed on charges preferred against Dr. E. B. Marshall, Rome, Ga., of irregularities, reported that it was the sense of the Association, in view of the letters read and the facts stated by the committee; and in view of Dr. Marshall's acknowledgment of error and implied regrets at having unknowingly violated the code of ethics; and in view of his long services as a charter member of the Association:

Resolved, That the Secretary be instructed to formulate a synopsis of the action of the Association, and that the charges against Dr. E. B. Marshall be dropped.

Dr. John S. Thompson, Chairman Prosthetic Dentistry, offered three papers, as follows:

"The Elevation of Prosthetic Dentistry," Dr. J. Y. Crawford, Nashville, Tenn.

"Practical Hints on the Use of Porcelain Crowns in Crown and Bridge-work," Dr. T. P. Hinman, Atlanta, Ga.

"Occlusion of Artificial Teeth," Dr. D. D. Atkinson, Brunswick, Ga.

OXIPHOSPHATE OF COPPER.

Dr. W. V. B. Ames.

At the meetings of the Mississippi Valley Dental Association, the Illinois State Dental Association, and the American Dental Association of 1892, was presented as a novelty the oxiphosphate of copper which had been used by the producer for two years or more at that time. While it is still somewhat of a novelty, it has been used by a few to sufficient extent to arrive at a more definite estimation of its value. Before placing it before the profession, the facts had been demonstrated that it possessed valuable properties and was entitled to some place in our list of filling materials, but more time has been and still will be required to arrive at a tangible conclusion.

Before going further it will be well to repeat what was given on previous occasions, that this cement is compounded by mixing black oxid of copper-cupric oxid with a solution of phosphoric acid. The cuprous or red oxid of copper will also form a cement with the same acid, but the cupric has been found best to serve the purpose.

It was early demonstrated that in this compound is formed a phosphate of copper *per se*, which is in solution in an excess of phosphoric acid while the cement is in a plastic state, and which will penetrate to an extent the tubuli of the dentine and exert a positive embalming effect, but which is insoluble in the oral fluids after crystallization takes place. The compound is a very hard and insoluble mass, and very black. In the early experiments it was found that the hardest mass was obtained by using a solution of phosphoric acid which, from its nature, was rather caustic to the vital tissues. When the components are properly mixed, a plasticity is obtained which would make it a very desirable material for crown and bridge setting if it were not for its caustic nature. The ideal results are obtained by using the cement in a creamy fluid state, so that if properly mixed a crown or bridge can be deliberately brought accurately to its position, and yet obtain the full density of the material when crystallized. On account of this caustic property, the use of the material was soon found to be contra-indicated for crown setting. This ability to obtain density after a fluid state being still an advantage, however, in the use of the material for filling purposes.

A cement with a fair density can be obtained by using the cupric oxid with a neutralized non-irritant solution of acid in which the same desirable plasticity is obtained, and which may be found to be sufficiently dense for crown setting purposes.

The consensus of opinion seems to be that extreme density of cement is not essential within a crown, but that proper crystallization from a fluid state is the main requisite.

Of course, a caustic material dare not be used indiscriminately for filling purposes, as in all probability the result would be an occasional devitalized and mummified pulp, such as has been often found under an oxichlorid capping or filling, but where conditions will admit of its use the cupric phosphate may be fairly flown on the surface of tooth tissue obtaining a firm attachment, and, as has been said, the maximum hardness of the material.

Its permeation of the tubuli of dentine, and of some disorganized dentine, renders its use often practicable where the thorough removal of disorganized material is impossible, effecting at the same time the arrest of the destruction of tissue and the correction of the sensitiveness which rendered impossible

the further excavation. A great many extremely sensitive cavities have been filled with this material with almost no preparation beyond the securing of fairly good margins, and after a few months prepared satisfactorily for filling in a more permanent manner. Its use in the stopping of cavities in temporary teeth has been most satisfactory. With very indifferent preparation of cavities, which is a boom in the management of these patients, these teeth can be saved through their natural term of usefulness with this material. The open fissures of the permanent molars of young children can be sealed up with this cement without putting the patient to any objectionable discomfort. Then in the treatment of the very trying grooves and cavities on the buccal surfaces of molars, especially the third, and the grooves on the palatal surfaces of molars brought there by the contact or proximity of a vulcanite or metal plate, this material can be employed as can no other known to me. With as thorough removal as practicable of the disorganized structure, but with no necessity for anchorage, these grooves or cavities may be flushed out with cupric phosphate in a fluid state, and most satisfactory results obtained. If the surface to which the cement is applied is hypersensitive, there will necessarily be some pain which will subside as we would naturally expect after the use of any other similar caustic, the irritation being similar to that caused by the use of chlorid of zinc.

When, on account of extensive decay, the cavity has perforated the exterior of a tooth below the gum line, and a fungus penetrates the opening, I know of no more satisfactory treatment than the excision of the fungus, obtaining a smoothly healed surface to the tissue by the placing of one or more gutta-percha stoppings against it, and then placing the cupric phosphate in a fluid state over the breach and filling with it as much of the cavity as desirable. The tissue apparently remains as healthy in contact with such a surface as any we might produce, this cement presenting a very smooth surface as it crystallizes from this fluid state if not disturbed during crystallization, and right here is an important feature to be kept in mind, *i. e.*, that the material must be used in a fluid state and not disturbed during crystallization.

This cement calls for manipulation so different from any of the zinc phosphates that we will not be apt to use it successfully except after seeing it used clinically, and then making some individual experiments. We are so accustomed to cements which need only a moderate amount of rubbing together of the liquid and powder, that it is difficult to impress on an operator, by means of printed directions, the necessity of triturating this mixture till the proper consistency is obtained.

The powder being added directly to the liquid till a stiff mass is obtained, vigorous rubbing is employed on a broad slab with a broad, stiff spatula, which will first reduce the mass to a fairly watery state, when the rubbing must be continued till the fluid changes from the watery condition to that of an unctious cream, resembling oil, paint, or printers' ink, which will just run slowly from the spatula in a stringy manner.

This cement is very susceptible to changes of temperature, it being necessary to use much more powder in proportion to liquid on cold winter than on hot summer days. This can be regulated also by having liquids for quick and slow setting, using one or the other, or mixtures of certain proportions of each, to suit the atmospheric conditions of the moment and the particular case in hand, but this can be only undertaken by one who is thoroughly

interested in accomplishing the best results possible with such materials. Too little notice is taken of the difference in the behavior of oxiphosphates with different atmospheric conditions. Our best results are unquestionably obtained during the cold winter months, when the atmosphere of our operating-rooms is almost devoid of moisture, and the temperature allows us to incorporate a larger percentage of powder with liquid than would be practicable on a hot summer day. The difference can be taken advantage of, however, by using a solution of acid during warm weather which would not remain fluid if exposed to low temperature, this solution naturally giving slower setting and allowing of the use of a larger percentage of powder.

The characteristics of the combinations of phosphoric acid and metallic oxids are so little understood by most operators, that it is small wonder that the maximum of good success is not acquired in their use. The average operator has one variety of cement at command, and confines himself to its use because it seems to be as good as any, and he is familiar with its manipulation. The very fact that some of the least reliable cements are most easily manipulated, explains their popularity and extensive use, but I hold that every operator should have at his command at least three varieties of oxiphosphate. He should have, first, one for filling purposes in which the liquid contains no soluble alkaline phosphates, and the powder is of a highly crystalline nature. This condition of liquid can be recognized by the absence of alkaline and the presence of acid taste when the cement has first solidified. This acid taste should be very slight, and should entirely disappear in a few seconds after immersion in the saliva. Such a cement should be mixed as stiff as practicable, and should pack definitely against the cavity wall, adhering to the tooth structure rather than to the packing instrument. This can be facilitated by having a film of the dry powder on the surface of the packing instrument which will facilitate the packing, but with a proper cement for the purpose, this is seldom necessary. With such a cement for this purpose there will be less complaint of failure at the cervical margin. While this variety may be used for crown setting where the operation can be quickly performed, admitting of the mixing of a fair quantity of powder with the liquid, but where more deliberate movement is called for, its use is contra-indicated for the reason that when used of a fluid consistency, proper crystallization does not take place.

The second variety should be for the setting of crowns and bridges when deliberate movement is essential for non-irritant cavity lining, and I will include the temporary sealing in of medicaments. This cement, according to the best of my knowledge at present, must be one in which the liquid does contain a soluble alkaline phosphate, and which does not give as hard a mass, but which has the working qualities more requisite to the purpose and is less irritating than the first described. It will not have the acid taste when mixed to the consistency for crown setting, and less, of course, when mixed for cavity lining. Such a cement is very adhesive, and if used for filling, there is great danger of faulty adaptation at the cervical margin, as while it adheres tenaciously to dry surfaces, it will not attach itself to moist surfaces, and it is my belief that a great many cervical margin failures might be traced to the employment of a cement of this variety, which was drawn away from a slightly moist cervical margin during the trimming of the filling, as this variety will draw under a cutting instrument, unless it has hardened thoroughly, and has not that crispness which will be acquired by

the first variety after crystallization has progressed for the same length of time.

The third variety of oxiphosphate which I think should be employed by every operator, is the oxiphosphate of copper, to which this paper has been mostly devoted. As time has passed since its employment was first conceived, I have felt more and more satisfied that great good can be accomplished with this, in a great many of what would be termed ordinarily desperate cases. As the cement congeals, so to speak, hot water should be ejected on it, which will hasten the crystallization to such an extent that the protecting napkin can soon be removed without the patient noticing any objectionable taste. If exposed to the saliva at the expiration of the same time, without having been treated with hot water, there would be a very objectionable copper salt taste.

As to the large variety of cements which I make use of, and which could be used only by one thoroughly enthusiastic over the possibilities of the material, it will suffice to say, that with sufficient variety of the material at command, one is able to prepare a cement with almost any quality desired, including, I believe, one in which a positive, or germicidal, antiseptic action may be obtained without detracting from the density, or giving of an objectionable color.

Dr. R. R. Freeman: It is clear that Dr. Ames has solved the question we have been trying to answer. Some cements work to our satisfaction at times, and again the same cement utterly fails us. I propose to sit at the feet of Dr. Ames and learn from him. I feel convinced that he knows much more about the cements than any of us, though, as he says, we don't know much about them yet.

Dr. T. P. Hinman read his paper, "Protecting Tips of Porcelain Teeth in Bridge-work; also, Banding Logan Crown," as follows:

PROTECTING TIPS OF PORCELAIN TEETH IN BRIDGE-WORK.

A beautiful piece of bridge-work is not stronger than the weak porcelain facing that give it such beauty.

How are we to strengthen and protect these fragile parts, without destroying their artistic beauty?

We should always use "up and down pin teeth," instead of the "cross pin teeth," because in the "up and down pin teeth" the strain is more equally divided, the pins being placed on the long axis of the tooth, and, generally, placed farther apart.

To protect porcelain facing from strain, bevel the porcelain on the inside with a corundum stone, beginning a little below the lower pin and grinding carefully toward the cutting edge so as to leave the cutting edge a knife edge (this grinding should be done with a fine corundum stone, as the coarse ones are liable to fracture the porcelain at the thin edge). Now back up the tooth with 22k. gold plate, 29g., letting the gold extend about one-sixteenth of an inch over the cutting edge, but not being burnished to it.

The backing is now covered with base-plate wax, the wax being trimmed away over the portion of the beveled facing.

Invest the tooth, covering up everything except the wax, and when the plaster is hard, remove the wax and flow solder over the exposed part of the

backing, using enough to restore the contour of the tooth. When cool, remove and polish each facing, wax into position on the bridge, arrange the teeth as desired, re-invest and solder the joints, and when cool remove from the investment and burnish the portion of the plate not covered with solder, down to the beveled portion of each tooth. Thus we protect the cutting edge from strain, by making the cutting edge an incline plane, and the angle thus made prevents pressure from coming on the porcelain, it being sustained by the backing.

If the backing be burnished to the angle or beveled portion of the tooth before the solder is flowed, the contraction of the metal on cooling will be sure to break it.

TO BAND A LOGAN CROWN.

Prepare the tooth to be crowned as for a Richmond crown; make a gold band of 22k. 29g., leaving it extra wide and larger at the opening than at the root; select crown and grind to fit the root proximately, the band being removed during this part of the operation; replace the band on the root and grind away the crown so as to fit the opening of the band tightly; then drive the crown home with a mallet, the band hugging the crown very tightly. Remove the band and crown together, and with a corundum stone proceed to grind the band away in front, but leaving it long in the back. The grinding should be always toward the tooth, as it will burnish the band to it, the long portion in the back being ground and burnished by the grinding over the bulbous portion. If this be done carefully, the band will cling tightly to the tooth and a perfect joint will be made. This method requires no inside disk and no soldering, so that a crown can be banded quicker than by grinding one to fit the abutment of the root, and it is certainly much stronger and more durable.

Dr. H. A. Parr, New York: I do not see that there is anything new in the paper of Dr. Hinman's. The idea illustrated is old. I know nothing about Logan crowns. I have never used one. The trouble with teeth cracking is generally in the soldering. If the heat is uniformly distributed, there is no cause for them to crack.

Dr. Hinman: I do not claim any originality in the method of grinding or soldering, but in the one point of burnishing the pure gold down over the beveled edge of the porcelain tooth after the soldering is completed.

Dr. W. H. Morgan: It is news to me that a piece of gold plate can be burnished down into such close contact as to hug the tooth and stay there. In my experience, it will always spring back. I have never seen it done.

Dr. Parr: If you let the metal run down to the cutting edge, waxing up down to the cutting edge, and then flow solder all around, it will not crack. It is impossible to make such a perfect joint that there will be no breakage between the metal and the porcelain, but we do the best we can. Every time you touch the gold you put spring in it. When you have got it just where you want it, let it alone. The paper says, invariably bevel to a knife edge,

and burnish to that edge, extending over. I say take pure gold, lay it on loosely, the solder will bring it to a close joint, and the porcelain will not crack unless a very heavy strain is put on it.

Dr. W. C. Barrett, Buffalo, N. Y.: You cannot burnish gold on to porcelain and make it stay there; it will get away. I have never used a Logan crown, so I can say nothing on that part of the paper. The subject of crown and bridge-work is now engaging the best minds in the profession, and is endless. Many of us can look back to the time when teeth were ruthlessly extracted. Thanks to crown and bridge-work, most can now be saved. Yet, much of this work done in the recent past, is calculated to do more injury than good, but it is capable of conferring the greatest benefits, enabling us to save many more teeth than formerly, and to avoid the necessity of many plates. It thus deserves our earnest consideration. If it can be demonstrated that gold can be burnished on to porcelain, after a bridge is finished, to remain there with a close joint, it is a great step in advance, and will repay me for coming here.

Dr. L. P. Dotterer, Charleston, S. C.: I have a method which is very satisfactory to me. In a bicuspid, for instance, where the face is all gone, but with the palatine wall standing, and the patient does not want an "artificial tooth," so you cannot cut it off, my plan is to use a combination gold crown with porcelain face. I take a central incisor, or other porcelain face to suit the case, and back it, soldering the sides of the backing to the edges of a gold band around the tooth, making a hollow crown to accommodate the palatine portion of the tooth, strengthening the inside with solder, and having the band very narrow on the buccal surface of the root. With a nice adjustment of the backing to the band it is serviceable and pretty in appearance, the back being all gold, and the face all porcelain.

Dr. H. E. Beach: What style of porcelain face is used? The fusible glass of which we hear so much has no value for this kind of work; the glass is of very poor quality and does not stand wear.

Dr. Dotterer: I use the regular porcelain faces or veneers.

Dr. H. E. Beach: In soldering the backing to a tooth after grinding to a sharp edge, solder must be flowed to the very edge to stiffen the backing and protect the tooth. Pure gold alone, burnished to the tooth, is no protection; it is too soft and too malleable. If the tooth is brought to a beveled edge, the gold burnished as close as possible and solder flowed to the edge, with uniform heat, it will not crack; only a slight line of gold should show, but the solder is necessary to stiffen the backing and protect the frail edge.

Dr. R. R. Freeman: When I looked over the program I saw

as the title of the paper to be read, "Occlusion of Artificial Teeth," and I thought I would present an idea of my own, which has been valuable to me. It may not be original. The great utility of artificial teeth lies in perfect occlusion with the remaining natural teeth. In bridge-work, including bicuspid and molars, it is important to get a perfect articulation between the natural and the artificial teeth. I use modeling compound, instead of plaster, for the bite, and flow in Melotte's fusible metal, which gives a very exact bite on which to adjust my work. There is no wearing away as with plaster, and by swaging or pressing between metallic casts you can get a very good occlusion. When I heat the fusible metal, I put a little water in the spoon with the metal, so that I get a heat of 212° , and it sets immediately.

Dr. H. A. Parr, New York: As the gold over the end of the tooth is for protection only, and not for beauty, why not lay the metal over first, and then flow the solder all over it. Then grind off only the solder and finish it up as wanted, as, for instance, in a bicuspid, when all the force comes on the end of the tooth. I do not see how you can lead solder where wanted if you do not first have the gold in place.

Dr. Wm. Crenshaw, Atlanta, Ga.: Dr. Parr, in shoeing the edges of porcelain teeth, do you not grind and bevel the tooth before laying on the pure gold, and flow solder over it?

Dr. Parr: Not necessarily.

Dr. Crenshaw: How do you burnish over the round edge of the porcelain? By the ordinary methods, beveling the tooth from the back at an angle of 45° , you are very apt to break the tooth at some stage of the proceedings.

Dr. Ford: I will describe my method of using an old tooth in new work. I had occasion to combine bridge-work with elongation of the teeth, because of mechanical abrasion.

I was not able to get any teeth to suit the case. It was necessary to elongate both the upper and lower teeth. The nerves of the teeth were all either exposed or dead, and I was obliged to cut the teeth off to the gums as though for pivoting. I thought of the English tube-crown teeth, and found they suited the case exactly. They are the least unsightly when used in bridge-work, are easily replaced if broken off, without removing the bridge, and require no unsightly gold tips. I am using them more and more.

Dr. W. G. Browne, Atlanta, Ga.: I have a method which gives me satisfaction. I use very thin platinum and place a compressed cylinder of gold under it, burnishing proximately; grinding off to a feather-edge bevel brings it into perfect contact, and the solder follows the interstices of the cylinder under the platinum, and you

can flow it without fear of burning your gold. If you cannot get a tooth of exact color, and wish to darken it, do not put the gold under the platinum or between it and the porcelain. Grinding down with fine corundum stone makes a very close fit.

Dr. S. B. Cook, Chattanooga, Tenn.: Gold is very sensitive to the burnisher, and the more you burnish it the farther away it gets; it puts a spring-temper in it. For the best results I use platinum, and simply press it down with a soft piece of wood. First anneal it, and then press it down and leave it in place, and it will be in contact. I believe the reason why we break our porcelain teeth is that we break into the enamel; that is as bad for a porcelain tooth as for a natural tooth. If we destroy the surface of a vulcanized piece, it will warp. The tubuli of the finished surface are all filled up, and it should not be broken. Another fault with our gold is that we use too much flux in soldering. In burnishing, soft gold will go down if you deal gently with it. Always file away from the inside. It injures a porcelain tooth to grind it.

Dr. Parr: I seldom use a tooth that I do not grind it somewhere to get a nice articulation. You may grind a tooth at any angle, and I will solder it to-morrow, and you can test the result. Grind it oval, or square, or beveled. The trouble is not with the grinding or beveling, but in the way you apply heat.

Dr. Crawford: The paper has awakened an interesting discussion, and I feel under obligations to Dr. Hinman for his concise paper. I think we are spending much time in learning as new what our fathers learned before we were born. This attempt to gain strength by tipping and shoeing porcelain teeth is a useless expenditure of time, and fractures more teeth than it preserves. We must depend more on non-occlusion than on strong backing reinforced with solder. You can back either an oval or a flat-faced tooth and get perfect adaptation.

Leave the gold slightly concave and as near the natural size of the tooth as possible, and when the backing is accurately adjusted rivet the pins, and with a fine corundum-disk—run toward the tooth—bring it to a feather edge. If a 22k. backing, cover the entire surface with 22k. solder, as the gold will not resist wear; pile on enough to strengthen it thoroughly. Discoloration comes from soldering on unclean gold; pickle it to its virgin condition before soldering, then your gold will not blacken, and use little flux.

Dr. W. H. Morgan: To say that cutting the enamel of an artificial tooth weakens it is all wrong; the body of the tooth is much stronger than the enamel, as my friend Welch, or any manufacturer, will tell you. Forty years ago we adjusted the butts of the teeth

up against the irregular surface of a gold plate and soldered them to place by their backings, having interstices in which foreign matter gathered and decomposed, soon making a gold plate very offensive. Then we learned to take gold foil and tuck it into all these spaces and run solder over it, making a uniform surface, and we found that solder would follow the gold and make a close joint. But you can't put a backing on a bicuspid and expect to flow solder over the porcelain cusps—gold has no affinity for porcelain; there must be a metal foundation for the solder to take hold of. Roughen the edges of the gold with a rough file and the solder takes hold, but you cannot burnish it down into contact and expect it to stay there. It becomes springy because by pressure the particles are brought into closer contact. We, who had long used soft gold, and then tried cohesive gold, suffered crucifixion in trying to make it stay where we put it. As a gentleman once said to me: "I make beautiful fillings with it, but some how they get away from the tooth and are loose when finished." If you lay a pillow down and press it down in the middle it will cock up at both ends, and it is the same with gold; as it hardens it contracts and draws up.

Dr. Parr: If you take a piece of pure gold the size and shape of a pencil, and bend it, you can never bend it twice in the same place. In working gold you must anneal it continually to take the spring out of it, and you must handle platinum in the same way. Get the best joint you can, and don't expect to make it perfect. As Dr. Morgan says, the whole process of crown and bridge-work is old. All these ideas we bring forward as new were known to the fathers years ago.

Dr. Hinman being called on to close the discussion, said: I feel at a disadvantage. Many of you are old enough to be my daddy. But I am glad I read my paper, for it has called forth a discussion from which I have learned heaps. I must say, however, that after I burnish down my gold, after the piece is soldered and otherwise finished, I do make it hug down—not with the burnisher though, but with a fine corundum stone and sand-paper, then cuttle-fish disks. I know I do it.

Dr. Crossland, Montgomery, Ala.: I thought I did it too, but if these old men say I cannot do it, I suppose I don't; but it certainly looks like it, and answers every purpose.

ROOT PLUGGING AND REPLANTATION.

W. Irving Thayer, M.D., D.D.S., Williamsburg, Mass.

Two men, who are alive this day, are responsible for this paper. One I have heard say, "I can successfully fill buccal roots and the anterior canals of inferior molars," of whatever abnormal angle they may have. It is understood of course that the teeth were *in situ*. I have no doubt but that this is true. But I have no such skill.

It is one of the best established principles in dentistry, that to arrest and prevent alveolar abscess in devitalized teeth we must disinfect the canals and fill them tightly to their very apical foramens. How many operators can, how many do, thoroughly plug these highways of bacterial gestation with the tooth in its original position? I cannot tell. I trust you all do. But I am a lamentable failure in this direction.

Another man, "treading o'er life's solemn main," younger than your writer, has had a beneficial influence on me by demonstrating his manner of filling up the gaps in the oral cavity. If this genius, Younger, can implant teeth successfully that have become desiccated, parched, barren, and lifeless, can we not replant a live, healthy tooth having fully nourished peridental membrane around the roots? Does Nature kindly accept, then embrace, and permanently hold in useful position foreign bodies? Yet this is what Younger forces her to do, and with considerable success. His achievements have been marvelous, defying all physiological law.

Thirty years ago, I extracted a sixth year lower molar, when out came with it a second bicuspid. I smoothed over the occurrence, but did not return that bicuspid to its original position. I was too ignorant. He should have brought an action against me for malpractice, because I did not correct the accident by replacing the bicuspid.

We all agree that to preserve a dead tooth, its canals must be made aseptic and filled by some indestructible compound. How shall we best do this? When we thus treat any of the anterior teeth that have a direct tract to the apical foramen, we have an easy task. But how is it with roots curved, serpentine and sinuous, that spring from wretched angles in lower and upper molars and bicuspid? I would give up in despair if I was compelled to properly fill the anterior canals of molars or even the buccal roots while the teeth are in the mouth, though I will not be so dogmatic or discourteous to say, no one can do it. My friend, Dr. Nelson

T. Shields, of New York, claims that he can do just these things. I cannot, and many others cannot.

Extract all upper and lower devitalized molars and bicuspid, and without pain, by means within the reach of every operator. Then properly prepare and return to its socket. With the tooth in our hand, it is easy to see the end of its roots, which is important. The best instrument for opening up the canals is a Donaldson nerve bristle, No. 3; then 4; then, if necessary, a No. 5. The operator can generally see the bristle come out at the apical foramen. Then the canal is clearly open. A drill is not so good. The tooth should be held in a clean napkin that is damp with a good germicide.

Excavate the cavity, clean the pulp chamber, and open up the canals; now make these spaces thoroughly aseptic. Be sure to make no mistake, and it is equally as important to furnish a correct asepta to the membrane adhering to the tooth-roots, and also to the alveoli, into which the asepticized tooth is to be returned. After the canals are thoroughly dried with absorbent cotton, fill the canals by pumping into them red base plate gutta-percha, that has been dissolved in chloroform. When you see this oozing out at the apical foramen, pack some quite small warmed pieces of gutta-percha into the pulp chamber, which will force out the semi-fluid stopping at the apical openings, and insure the solidity of the chloro-percha, through the entire canal. Now cut off the root about the sixteenth of an inch.

Allow me to emphasize the importance of making the peridental membrane and the alveoli aseptic. This is of the greatest importance. The replantation can be made painless by benumbing the tissues within the alveoli by fresh cocain preparations, and complete asepsis.

If these directions are followed there will be only recuperative inflammation and little soreness. If before the operation there is considerable peridental inflammation, or even an abscess, it is no bar to the operation, but there may be more pain for the next few hours. If so, reduce the pain by pure alcohol, by adding fifty per cent of Hamamelis Virginiana, or Pond's Extract, which is the same thing, warming to a bearable heat and holding a teaspoonful around the implanted tooth; also administer one drop Aconitum Napellus as an arterial sedative, in a half tumbler of water, giving the patient two teaspoonsful. Repeat in an hour, and then every two hours till relieved. If the crown of the tooth is much broken down, take the tooth to the grinding lathe and form parallel walls around the tooth crown, so that you can adjust a gold crown with little trouble.

I made my first attempt in replanting with a trembling hand, considering it almost a cruel undertaking; but I have found it full of mercy, and happy results, an effectual bar to future pyogenic conditions.

CASES.

I removed the right lower first bicuspid from the mouth of a lady, aged 44, at nine A. M. On the end of the root was a large abscess. For more than a week the tooth had caused deep seated, heavy pain. The cavity and canals were cleaned and made aseptic; then a No. 3 Donaldson nerve bristle was easily worked down the canal, till the point issued at the apical foramen. This took from three to ten minutes. I then used my aseptic thoroughly, and dried with absorbent cotton wound around a bristle. Some small pieces of base plate gutta-percha were dissolved in chloroform and pumped into the canal, till it was seen to issue at the foramen. Occasionally a drop of chloroform was put into the chamber to keep the chloro-percha fluid. As soon as any of the chloro-percha exuded from the end of the root, small pieces of gutta-percha, softened by heat, were pressed into the pulp chamber. This forced more chloro-percha out at the apical foramen, and insured the solid packing of the canal. The peridental membrane was then carefully dissected back, so that this tissue could be turned over the root again after the latter had been cut off about the thirtieth of an inch, to prevent any subsequent absorption of the root. The outside of the tooth was cleaned of any microbes, and the tissues in the alveolus benumbed and disinfected. Then the redeemed devitalized tooth was carried back to its original home without pain. The first night the patient slept well, and in seven days the tooth was as firm as ever, healing by first intention, though the tooth was returned into a previously suppurating alveolus. It is evident, that "one swallow does not make a summer," or one successful case prove anything, but this one operation converted me from the old bungling form of root plugging in the mouth, so full of guesswork and failure, into a glorious field of usefulness, that is far removed from uncertainty.

CASE 2.—I extracted a live, lower right sixth year molar from the mouth of a miss, aged 18 years. The posterior root curled so closely to the anterior one as to make the extraction, raking over a septum, somewhat difficult, especially as this was the first time the arch had been broken.. There were two canals in the posterior root that issued at the same foramen. The anterior root had two canals also, but unlike the posterior there were two apical openings. You can well imagine the perplexing obstacles in such a tooth in

situ. The tooth was operated on substantially, as in case one. This patient was so unkind and unappreciative, as to go home and sleep the first night as well as ever. Later, I adjusted a gold crown.

CASE 3.—In just twenty-one days from the above proceedings, this young lady very cheerfully submitted to have the same operation performed on a left lower molar. This tooth also received a gold crown, as well as the tooth back of it. Every one of these teeth are as firm and solid as before treatment. There was no more soreness, numbness, or tenderness than though they had never been removed. Before the teeth were reimplanted they were taken to the grinding lathe and ground to parallel walls, so that gold crowns could be easily adjusted.

CASE 4.—From Miss H., aged 26, an upper right first molar was taken and treated in the same way. One of the buccal roots broke off in coming out. In removing this, a portion of the buccal plate of the alveolar was cut away, which showed the buccal root conspicuously, yet the operation was a success.

CASE 5.—I removed from Mrs. Dean, a lower second right bicuspid. I filled the canals, pulp chamber, and a large cavity, and reimplanted the tooth. There was considerable periodontal inflammation, which speedily gave way under the treatment described above. On the seventh day, union by first intention had taken place in a less time, and there was little tenderness.

TO MAKE A MOLAR OR BICUSPID CAP CROWN.

Make a band and fit in position in the mouth. Notice that it stands in line with the other teeth, as desired, having it come snugly against the teeth on either side. With a fine pointed instrument, accurately trace the outline of the gum on the band; remove and trim to go under gum, as desired; finish thin and very smoothly. Again place in position and fill the band with moldine, and be sure to keep it dry, allowing enough, that a perfect impression of the occluding tooth may be had; remove, and with a sharp knife trim away overhanging edges, and shape as desired; mark band and moldine-cap so you can tell how they go together after cap is made. With a ribbon saw or other thin instrument saw off the moldine close to top of band; place on a smooth surface, and, with a rubber ring around, pour over it Melotte's metal into this mold; swage your gold for cap, fill and solder to band. Oil the mold and lead before swaging, and wipe gold carefully before annealing each time.

G. A. Yant, Chicago.

PROFESSIONAL PRIDE.

S. J. Spence, Cumberland Gap, Tenn.

The dentist who does not take a pride in his profession is not likely to become much of an ornament. Of the dentist who does not glory in his noble art and science may be ascribed the words of the poet who apostrophizes on the man who lacks patriotic enthusiasm :

“ If such there be, go mark him well ;
 For him no minstrel raptures swell.
 High though his title, proud his name,
 Boundless his wealth as wish can claim ;
 Despite these titles, power and pelf,
 The wretch concentréd all in self ;
 Living shall forfeit fair renown,
 And doubly dying shall go down
 To the vile dust from whence he sprung,
 Unwept, unhonored and unsung.”

While most of the profession are eagerly pushing forward there are those who are a weight and a hindrance. Let them shake themselves like awakening Samsons. Let them gain enthusiasm by the grand prospect of the field where lie the afflicted to be relieved, the diseased to be made whole, and the deformed to be restored to symmetry and soundness.

Few even of the eager of our ranks realize how much they have to be proud of. Into their labors may be brought a greater number of the arts and sciences than into any other profession. Here the purely scientific and the merely manipulative meet together. Here the mental and the mechanical kiss each other. The dentist has need of the sciences of medicine and surgery, chemistry, metallurgy, and sculpture. Is he an adept in physiognomy or phrenology? He can find a field for his knowledge in dentistry. Is he a Christian or a humanitarian? Here is abundant room for its exercise and development.

It is no place for the lazy or the laggard. Its labor is arduous and exacting, tasking to both body and mind.

Nor is dentistry without its martyrs. While itself preëminently useful in bestowing longevity on others, many of its noblest sons have fallen prematurely worn out by their enthusiastic devotion.

The evening of dentistry's first day is on us, and a few of its pioneers are still standing among us, but one by one they are falling. Let their places be filled with enthusiastic youth bent on honest work. Dentistry wants not laggards, but workers; not monkeys but men; not tooth-carpenters, but artists; not money-grabbers, but martyrs; not ignoramuses, but scholars and gentlemen.

A YEAR'S EXPERIENCE WITH THREE NEW REMEDIES.

Dr. I. N. Carr, Tarboro, N. C.

A year ago I demonstrated before this Society the use of three preparations that had but recently been brought to the attention of the profession by Dr. E. C. Kirk, of Philadelphia, and by invitation of the President of the Virginia Association, I attended their meeting at Charlottesville, and did the same thing, and promised to present the results of my experience at a subsequent meeting. I now present for your consideration this report, which is a practical result of a fair test of their virtues, and which, I trust, will be of interest to you all.

The preparations are those of pyrozone, sodium peroxid, and Dr. Schrier's Compound of Sodium and Potassium, in metallic form. Each of these have their places in my daily practice, and it requires only ordinary judgment to decide which to use in each case, or whether it is best to use one or more. As, for instance, if you are going to treat a tooth for a "blind abscess," adjust the rubber-dam, and spray the cavity and canals with five per cent ethereal pyrozone, allowing no instrument to enter the root. After discharge of pus ceases, spray the root with the three per cent aqueous solution; then use the sodium peroxid, or the sodium and potassium. If it should be a lower molar, I prefer the sodium peroxid, because the roots of these teeth are so thin, and the canals so small, that it is rather difficult to carry a broach loaded with the sodium and potassium to the ends of the roots; but with the other preparation I put a few drops of a fifty per cent solution into the cavity, and by means of a fine broach work it clear down to the end of the root, and if a little passes beyond, it does no harm. Now wash the roots with warm water that has first been boiled, dry with absorbent cotton and the hot-air syringe, and fill with what you can make the best root filling of. I do not hesitate to treat and fill such cases at one sitting, though if the patient lives in town I sometimes seal the root hermetically till the next day, particularly if there has been periostial disturbance; but ordinarily I fill at one sitting. If the tooth is an upper front, after evacuating the abscess by the five per cent pyrozone, I use the preparation of sodium and potassium of Dr. Schrier's. This will destroy all germs of animal or vegetable life, and leaves the root sweet and clean; but during the past six months I have used the sodium peroxid (known under the formula N_2O_2) more than anything else; it is much cheaper, bleaches the teeth nicely, and does the work just as well.

PAINLESS EXTRACTING.

We hear so much about painless extracting these days that we are in self-defense compelled to use a local anesthetic for the various emergencies that demand some sort of ease for the patient. The many alluring advertisements in our dental journals, and the floods of circulars received by every dentist, are apt to entice a good many hard-earned dollars from the profession before every one awakes to the fact that text-books, containing all the latest investigations in the medicaments known to produce local anesthesia, are available to every one of us. One-sixth to one-fourth of a grain of the large crystals of cocain, dissolved in about ten to fifteen minims of an antiseptic solution of hydronaphthol, or boric acid, will give a better result than can be obtained from any secret preparation. By using a fresh solution every time the cocain is employed, no nausea is apt to be produced, and more frequent applications are permissible than when an old or decomposed solution of the drug is employed. Cocain comes, when purest and most reliable, in large crystals; but they are somewhat more expensive, and for that reason difficult to procure in most drug stores. Carbolic acid is a good thing to avoid in hypodermic injections. A dram of a two per cent solution of carbolic acid is liable to produce grave results, and many distressing symptoms arising from cocain solutions are as much due to the carbolic acid as the cocain. Where there is a large number of teeth to be extracted, it is well to fortify the patient with a good dose of arom. spts. of ammonia. The heart is well sustained in this way, and the cocain fails to show its constitutional effects. Many dentists have been forced into the use of local anesthetics by a misguided public and disreputable dentists. There is no more efficient advertisement than to extract a dozen or more teeth for some old lady and accomplish it without any serious pain. Quacks all recognize this easy way to fame, and while their puffing usually secures an uncouth clientele, in a country town they get many good fish into their nets; so the practice of painless dentistry must be met by the respectable dentist with equally successful methods, as did Moses surpass in their own art the Egyptian magicians.

Dr. Bergstresser.

COPPER AMALGAM AND THE SECOND COMMANDMENT.—If a dentist doesn't swear when he looks at copper discolored cupped fillings, he is sure to "keep up a mighty thinking," while cutting out this miserable filling.

C. H. Thorn.

CARIES OF THE ALVEOLUS.

As a general rule, dentists have not in the past given as much attention to pathological studies as they should. Our best men have been ambitious to shine as operators, or as mechanics, and have neglected the first and most important of all studies, if we are to be considered in any sense as medical men. Beautiful fillings are too often inserted in teeth that are not in a physiological state, or which are in relation with diseased tissues, and the consequences are sometimes very serious. Many teeth are extracted simply because an otherwise excellent operator is not skilled in diagnosis and treatment. Diseases which, if properly treated at the outset, might be easily cured, are not promptly recognized, and are temporized with, receiving only simple topical applications, till the general surgeon must be called in to remedy the effects of the lack of knowledge. Serious tumors have been dallied with till they have invaded tissues which should have been saved from their ravages.

Dr. W. W. Kinkadee, of Nashville, Tenn., in the *Columbus Medical Journal*, gives the following example of a reliable treatment for an acute cold, and for the incipient stage of inflammations of the air passages, as tonsillitis, bronchitis, etc.

- R. Atropin sulfatis..... gr. $\frac{1}{10}$ - $\frac{1}{10}$.
 Morphin sulfatis..... gr. ss.
 Water..... f3 ij.

M. Sig.: One teaspoonful every half hour.

SENSITIVE DENTINE.

For sensitive dentine it is said a 4 per cent cocain with 50 per cent each of carbolic acid and benzoin gum is good.

Peroxid of sodium seems to be the coming remedy for bleaching teeth, and also for cleaning root canals and the destruction of abscesses. Care must be taken not to touch the gum with it.

Disease of the antrum is generally an extension of inflammation of the mucous membrane of the nose from "cold." If the apex of a root of a tooth nearly penetrating its floor becomes abscessed, an opening may bore through its wall, so that the pus may fill the antrum and be discharged through the nose.

An examination of 6,000 skulls by Dr. Talbot, revealed 1,274 abscessed molars, with 76 of them discharging into the antrum.

A writer in a recent dental journal asks, Why have dark joints in dentures constructed of gum sections when it is possible to fuse

the blocks together with gum enamel? Exactly, I thoroughly agree. But why not go a step further, and fuse an entire front of eight or ten plain teeth, arranged and articulated for each case, on platinum ribbon, and then use this as the front block for vulcanite or rubber attachment work? This I have successfully accomplished, using aluminum as a base, adapting the continuous gum block for the front and plain teeth for the back. It seems to possess nearly all the advantages of the continuous gum denture without its weight, being almost, if not quite, as light as rubber alone, and the extra cost almost too insignificant to be taken into consideration.

Geo. O. Webster, St. Albans, Vt.

SETTING A LOGAN CROWN.

Prepare your stump to receive the crown, make alignments by "bending pin," if necessary, then take rolled block tin, lead, or aluminum, of simply a sufficient thickness to hold to shape when swaged into form. Now cut a piece large enough to cover the face of stump. If your crown is a Logan, puncture for pin, and place the plate thus made ready against the face of the root to be crowned, and swage it to the face with orange-wood stick, or other blunt instrument, to make adjustment correct. Remove stick and place a fold of napkin, or a pellet of bibulous paper, between your swage and your plate, and rap it sharply to place. Now grind to place, and your fit is complete. We have a metallic face to work against instead of a plaster of paris face.

If your crown is a pinless one, and you wish to make an absolutely water-tight joint, take your swaged model of face of root to your engine; mount your sandpaper disk; place the concave face of model of root against the smooth side of disk; now take your crown, and place the cut end against the cutting surface of disk, and press it well back against plate, and grind down to completeness. You will have a perfect fit throughout the whole contact of surface, if you have been particular in preparing your root.

A simple and convenient way to anneal Swiss broaches is to wrap a half dozen up in a strip of base plate gutta-percha, first heating the gutta-percha till it is soft, then wrap it thoroughly around the broaches and set fire to the gutta-percha. When it has burned out, let the charcoal remain around them till it is cool, and you will have a finely annealed broach.

W. M. Carter, Sedalia, Mo.

CURRENT THOUGHTS.

THE DENTAL PULP, ABSCESSSES, AND ROOT-FILLING.

Charles Keys, D.D.S., Rio de Janeiro, Brazil.

To destroy the dental pulp painlessly, take a disk made of No. 60 tin-foil, and cut to the size of bottom of cavity into which it is to go, and depress between end of excavator handle and a piece of soft wood, or rubber pad. Fill with campho-phenique, into which is placed sufficient aristol to make a syrupy mass; to this add two or three crystals of cocain hydrochlorate, and in the center of this little disk of paste put about a one-hundredth part of a grain of pure arsenic. Dry the cavity (after having previously cleaned out and washed with warm water) and invert the disk and contents over the exposure and fill over with temporary stopping, being careful to avoid pressure sufficient to flatten the disk on the pulp.

Since the latter part of 1889 I have used almost exclusively this method, and I cannot record a single case which gave pain, unless inflammation existed in the pulp previously to the application.

For allaying inflammation in the pulp, extending to suppuration, with or without pain, I have found nothing more effective than thymol, which is applied pulverized in a tin disk inverted over exposure, and cavity filled with temporary stopping, having previously cleaned the cavity and washed with warm water. If pain be very severe, a drop of chloroform placed in the cavity, after the disk with thymol is adjusted, and previous to putting in temporary stopping, will usually lessen pain; otherwise thymol generally requires from ten to fifteen minutes to produce effect. In slight cases one application is usually sufficient, but in severe ones sometimes several are necessary before arsenic may be applied.

To avoid pericementitis, abscesses, etc., in the removal of putrescent pulps, exclude absolutely the entrance of saliva, use clean instruments, flood cavity with some good antiseptic, and at first sitting remove all of the pulp possible without letting any of the matter or the end of the broach pass beyond the apex. The patient should be told to give notice on first sign of sensation, as the main point is to avoid, under all circumstances, the passage of anything into the tissues beyond the end of the root. This done, follow with loose dressing of campho-phenique containing about ten per cent of aristol. If a second dressing be necessary, use oil of cassia with aristol in same proportion as above. Vapors of the former are less likely to produce irritation than those of the latter.

In using peroxid of hydrogen, pyrozone, or natrium and kalium, care must be taken to keep the entrance to canals from clogging, else the gases set free may pass the other way and carry with them matter beyond the apex, which must be avoided.

To treat abscess without fistula ("blind abscess"): After the canals have been thoroughly freed from septic matter, pump into the abscess campho-phenique, with ten per cent aristol, till the patient can feel it, leaving very loose dressing in the root with only sufficient cotton to keep out food (pure aristol incorporated into cotton anywhere exposed in the mouth will keep it "sweet" much longer). Subsequent treatment consists in keeping the canal clean and aseptic, with loose dressings, till no more pus can be found in the canal. Much trouble is frequently caused by over-treatment.

If hydrogen peroxid be used to clean out the canal and abscess, care must be taken not to allow the apex to become clogged.

For filling root-canals: Take of oxid of zinc and aristol equal parts, and oil of cassia and vaselin enough to make a soft, putty-like paste. After the canal or canals are thoroughly dried, fill the pulp-chamber with this paste, and, with a hot instrument, or nerve broach with wisp of cotton wrapped around it, work into place. After the canal is filled with this mass, a gutta-percha cone, the size to fit the case, is pressed into the canal, the surplus being removed with a hot instrument. The balance of the pulp cavity is filled with cement.

I have used this paste alone in filling roots of temporary teeth, and subsequently, after roots were absorbed, extracted them and found the paste, though much harder and tougher, perfectly intact, and protruding a little, somewhat like crab's eyes. In no instance have I found any irritation caused by this paste, which I have used constantly for over three years.

International.

PAINFUL DENTISTRY.

Did any of you ever notice how some dentists adjust the velvet rubber-dam? Is it painless? Did any of you ever have that soft floss silk slipped in between your teeth, down on to and into your gum, by one of those dentists who does not believe in so-called "Painless Dentistry?" Was it painless? Could it have been made less painful? I think it could. And the rubber-dam clamp—did you ever feel one? And yet Dr. Rhein, of New York, in the *Dental Cosmos*, says he is sorry for the dentist who cannot adjust one painlessly. Did any of you ever let some brother dentist try to find an exposed pulp with an instrument just big enough

to fit into the exposure and make pressure on the nerve? Did you call that painless? Did you ever see a dentist trying to obtund sensitive dentine by drawing in alcohol vapor from a lamp, and blowing it out into the cavity with a chip blower, producing hot and cold blasts alternately, after medicating the cavity with oil cassia, etc., and the dentist wondering why the drug did not work? I have seen a dentist take an excavator to put arsenic into one tooth, the pulp of which he wanted to destroy, and use the same excavator, uncleaned, to clean out another cavity, and wonder why that tooth pained afterward. Usually in such cases, if they are reported, the name, age, nationality, sex, color of hair, etc., would be given, but the arsenic would not be mentioned.

"Delicacy of manipulation is what must be acquired by a dentist to be successful," says Dr. Geo. H. Cushing, of Chicago. It includes nearly everything a dentist has to do. Imagine a dentist trying an obtundent—a drug—on sensitive dentine, and then cutting the dentine with a dull bur. Do you think he will regard the obtundent successful? Or the patient think differently from him? A friend of mine, a fine operator, a professor in a dental college, often would adjust a rubber-dam, put in an obtundent in the cavity of the tooth, and leave the patient while he shaved himself in his laboratory, wrote a letter or read a chapter or so, and on his return wonder why the patient called the whole operation painful. I once heard a professor in a dental college tell a lady to hold perfectly still as he was not going to hurt her at all, and at the same time he took a chisel-shaped excavator and exposed two pulps. After her scream he said: "Why, did that hurt you?" "Mercy, yes," she said. "That's good, I wanted it to. I had to do that way to treat them," the professor replied. Now, do you think that woman could be made to believe and feel that that man would do work for her, or even look at a tooth, without pain to her?

Did any of you ever have an aching sore tooth and be obliged to have your assistant or student, in whom you had little faith, dig or probe into it to see if he could tell, for you, what made it ache? Did it not seem to you that every move he made went direct into the pulp, when in reality he might have been scraping on the rubber-dam clamp simply? But how differently you sat in the chair a few days after, when you had gone to a neighbor dentist, in another city perhaps, one in whom you had perfect confidence that he would do just what was right and be accurate and careful. You all know of the many cases on record of death from fright, and you all know the influence of the mind over the body during any trying ordeal.

Dr. C. B. Blackmar, in Register.

ARTIFICIAL CROWNS.

Dr. J. H. Crossland, Montgomery, Ala.

Mine is a band crown, the band placed in a groove cut in the end of the root, as near as practical to the circumference. Grind the root a little beneath the gum margin all around, as you would for an ordinary porcelain crown. With a fine drill (preferably one provided with a gage) drill a series of holes, as near as practicable to the circumference, about a thirty-second of an inch deep, and as close together as possible. Cut these together, and fit into the groove thus formed a band of gold 28 or 30 gage, 24k., and sufficiently wide to reach bottom of groove and project a trifle beyond surface of root end. Grind this to level of root. From pure gold, 34 gage, cut a cap to proximately fit root end. Place in position and burnish to edge of band, remove all and place band in position on cap, which will be plainly indicated by the fact that it will fit only in one position. Solder with 20k. solder, using as little as possible. Replace and burnish thoroughly to root. Punch and place platinum post in position, and secure with hard wax. Remove, invest, and solder. Trim accurately to outlines of root end. Place in position again. Back plate tooth with gold, and proceed as with ordinary porcelain faced crown.

In backing, grind plate tooth to fit cap, bevel from pins to cutting edge, reducing it almost to a knife edge. Grind this edge away, leaving the end square or beveled a little toward labial surface. Cut 34 gage, 24k. gold backing, slightly longer than tooth, punch, place in position, and secure by spreading pins. Burnish thoroughly to tooth from tip to tip, then over cutting edge to square end, or beveled surface on labial aspect. Trim accurately, allowing no gold to extend beyond square end or beveled surface on front, as it would cause your tooth to crack in soldering. Cut another backing long enough to burnish over cutting edge, but not further than the slope of the tooth toward gingival end. Punch in this a series of small holes to insure a perfect union in soldering. Straighten pins, place in position, secure as you did in backing number one, burnish over end of tooth, and trim accurately. This is to thicken the gold on cutting edge, and to prevent fusing of outer backing. Grind gold on gingival end of tooth to fit cap. Place all in position and unite with wax, being careful that joint between gold on end of tooth and cap is covered with wax, so that none of your investing material can get in to prevent a thorough soldering.

Extend wax over all gold exposed on cutting, so that it will

be exposed when wax is melted out of investment. Invest in the usual way. Heat very hot before beginning to solder. Use very little solder to unite cap and backing, and continue heat for a moment before placing more solder, which causes it to flow thoroughly into the minute crevice between cap and backing, making a beautiful joint. Use 20k. solder, as a little of it may be exposed at cutting end of tooth. If desired, an extensive tipping can be made by placing pieces of gold plate at this point, in the investment, or by using a number of backings and burnishings over end.

Exposure of gold, presenting the appearance of fillings, can be made in the same way. The mechanical advantage of the gold extension at this point is of course apparent, and the slight esthetic objection can be reduced to a minimum, as by prop or beveling a small amount of gold can be made to serve the purpose.* I have used this principle in bridge-work also, and am much pleased with it. If it were generally used, we would hear little discussion as to methods of constructing bridges so that teeth can be put on without removing piece. It is less bulky and more shapely than the old ferrule crown; exposes no gold at gum margin; allows a much more favorable and accurate adjustment with regard to position of other teeth; can be used where strikingly convergent or divergent roots are to serve as abutments for bridge; is especially adapted to conically-shaped roots; causes less pain in adjustment, and will not irritate pericemental membranes. It is extremely cleanly.

To those having fondness for the ceramic art, I suggest that this form of attachment can be used to advantage by making the band and cap of platinum and baking in porcelain backing, producing a highly esthetic crown, possessing to some extent the same mechanical advantages as if backed with gold, etc.

A crown provided with four extra posts as a substitute for inside band can be used to advantage in some cases, backed either with gold or porcelain.

Busy Dentist.

Aristol dissolved in campho-phenique is a "dead shot" on abscesses, and mixes well with chloro-percha for filling root-canals. I do not doubt that a weak solution of trichloroacetic acid with pumice is more effective for cleaning teeth than tincture of iodine, but what is the objection to a weak solution of aromatic sulphuric acid used that way, finishing with a pleasant saponaceous tooth-powder? I have done so for twelve years, and, if not mistaken, have to thank Dr. T. B. Welch for the idea. *C. H. Thorn.*

*The tooth can be beveled so that backing will come quite to cutting edge and lap over it without being exposed to view.

TROPA-COCAIN IN PAINLESS EXTRACTION OF TEETH.

Tropa-cocain, or benzoyl-pseudo-tropein, as it is scientifically termed, is an alkaloid, first taken from the leaves of the Javanese coca plant by Giesel, of Berlin, through suggestions from Liebermann, who subsequently prepared the same substance synthetically. We owe the credit of its development as a practical and useful therapeutic agent, however, to an American physician, Dr. A. P. Chadbourne, of New York City. My investigations of its usefulness have been confined to the art of painless extraction of teeth. Tropa-cocain is of a somewhat similar nature to cocain, excepting that it is almost free from the toxic and other deleterious effects of that otherwise wonderful drug. It is preëminently a local anesthetic, and, as such, it possesses advantages over cocain that make it incomparable. These advantages may be even greater than at present demonstrated. They consist in greater power; quicker action; freedom from systemic disturbances to a great extent; is not depressing to the cardiac motor ganglia; does not produce ischemia or hyperemia; is a moderate antiseptic, rendering subcutaneous injections free from danger of sloughing or abscesses; retains its activity for months in solution, and is free from the danger of cocainism, because of its very slight systemic effects.

The principal drawback to its use lies in its present great expense, which is unnecessary, as it is not difficult to obtain, or expensive in manipulation. It is best used in four per cent solution, using a weak solution of pure sodium chlorid as a menstrum. Its permanency in solution is probably due to lack of fungoid degeneration, as a result of a natural antiseptic quality which cocain does not possess. In the painless extraction of teeth I have been charmed by its use. The many concurrent and subsequent ill effects of cocain have driven it almost completely from the hands of conscientious physicians and dentists. Tropa-cocain now is offered as a more worthy and reliable substitute. By its use we may assure the possessor of unwanted teeth that extraction of offending molars may be compared to clipping of the finger-nails—nothing more. We may coolly secure a firm base hold of a decayed crown and successfully remove what would otherwise more than likely be broken, bungled, and botched. We may even crush through the edge of the alveolar process, grasp an ugly root, and smile as it quickly and without pain emerges into the light of day. My experience has taught me that details must not be neglected, however, in its use, if we would have the best results. The gums

near the teeth to be extracted should be first wet with the solution, and after a delay of about one minute, two minims should be injected with a hypodermic syringe, in two places about half inch apart, and not less than one-fourth inch from the margin of the gums, both inside and outside of the teeth, making four injections of two minims each. This amount is sufficient for the extraction of from one to six teeth in that vicinity. Its effect will continue about twenty minutes. Minims should be gaged by the small thumb screw on the piston of the syringe. The injections should be deep, and in the direction of the roots.

A. D. Hard, M.D. in Medical World.

HOMEOPATHIC TREATMENT OF TOOTHACHE FROM PULP-CAPPING.

Charles H. Taft, D.M.D., Chicago, Ill.

The interest which has been awakened in the homeopathic treatment of cases occurring in the every-day practice of the dentist, as manifested by the numerous letters I have received requesting such information as I could give and which would enable others to pursue a line of study intelligently, with the end in view of having at command, if nothing more, an effectual method of quickly relieving the various kinds of toothache, from causes with which we are all familiar, prompts me to relate a recent case in practice, and to suggest some of the indications which furnish a key-note for the remedy given.

As a preface to the subject, I may say that in recent papers I have dwelt at some length on the philosophy of the homeopathic law of cure, and have suggested the work entitled "Hering's Domestic Physician," with its chapter on the affections of the teeth, as furnishing, to me at least, an invaluable aid for the treatment of many cases where the ordinary dental therapeutic agents at our command have proved unsuccessful.

A complete mastery of the art of healing, or the ability to relieve human suffering, even when based on a simple and well-established law, is not to be acquired in a day, if indeed in a lifetime; but to the earnest and thoughtful student, neophyte though he be, there is a fascination in the study of this law and the manifestations of its operation which cannot fail to urge one on to still greater effort, when once such study has been entered on free from partisan prejudice and with the simple desire to find the truth.

I am well aware that many practitioners make it a practice never to cap an exposed pulp, even though the pulp is a freshly

exposed one and devoid of any inflammation or irritation, but deem it best to destroy it at once. I destroy it only when I am confident its vitality cannot be successfully restored and maintained without giving the patient future and continual annoyance; for I am of the opinion that a live tooth, like any other organ, is an infinitely better member of the economy than is one in which such vitality has been destroyed, and especially if the tooth happens to be one of the incisors or bicuspid.

The following case in practice is intended to furnish one of the many reasons for such belief, and to suggest such therapeutic treatment as a similar emergency may demand.

On March 16th, Mr. F., aged thirty-two, had a large coronodistal cavity in the right upper second bicuspid, and another in the coronomesial surface of the right upper first molar. They were carefully excavated, but not without avoiding an exposure of the pulp in the molar, and perilously near one in the bicuspid. Both teeth were exquisitely sensitive to the touch of an excavator, but had never given the patient the slightest discomfort. The exposed pulp was capped by applying oil of cloves to the pulp and dusting over it dry oxid of zinc. The same precaution was taken with the bicuspid, and both cavities were then filled with oxiphosphate, mixed to the proper consistency. The operation finished, the rubber-dam was removed; the patient felt no pain or discomfort from the fillings, and, rinsing out the mouth, was about to leave the chair, when he seized his head with both hands and cried aloud with pain.

The pain continued for several minutes, coming in terrific paroxysms of but a few seconds apart, with determination of blood to the head and face. Becoming well-nigh frantic with pain, he implored me to extract the tooth at once, and in no uncertain tone, saying that he simply could not and would not stand it.

Watching his symptoms for a few moments, I placed on his tongue a few pellets of the potentized chamomilla, and waited for its effect.

Between the paroxysms he asked what I had given him, and, contrary to my usual custom of naming the remedy, I said it was chamomilla.

With a good knowledge of remedies, being in the wholesale drug business, he remarked with no apparent confidence in me or the remedy, that if chamomilla stopped such suffering as his, it would be the first time he ever heard of its so doing. He added, however, before he left the office, that he was open to conviction.

As I stood by the chair, watching him in his writhing, I felt sure I had made no mistake in the selection of the remedy, and

that, like an arrow from the bow, it would go straight to the mark. Within five minutes his writhing ceased, and the pain melted away like dew before the sun; his face began quickly to assume its normal color, and the paroxysms only recurred at long intervals and with decreasing severity during the next fifteen minutes, till they ceased entirely. He remained an hour after the medicine had taken effect, fully expecting the pain to return and compel me to extract the tooth, but it was obstinate and positively refused to ache. Finally he left the office, with the assurance from me that in all probability there would be no recurrence of pain, and with an equally strong belief on his part that he would have to hunt up a dentist in the middle of the night and have his tooth extracted.

Up to the present writing, during which time the patient has had several subsequent sittings, there has been not the slightest recurrence of pain or discomfort.

Doubtless some skeptical friend will venture the remark that the cessation of pain was not caused by the medicine, but ceased of its own accord. Another will probably suggest that I hypnotized him. A third will emphatically assert it was not the medicine, for how could attenuated "moonshine" effect so complete a relief? While a fourth will incline to the belief that I employed the methods of the Christian Scientist, and assured him that his suffering was simply a delusion and did not really exist.

To all such my statement will undoubtedly be of little interest or help in similar cases, but to those who are interested in the action of remedies and the laws which govern them, so far as it concerns us in our every-day practice, this paper is especially addressed, with a view of pointing out the fact that one of the strongest indications of chamomilla for the relief of a toothache like the one described is the fact of its driving the patients so nearly frantic with pain that it is difficult for them to speak a pleasant word, or in a pleasant tone of voice. In a word, are thoroughly ugly.

In striking contrast to the always jovial, happy-go-lucky disposition of the patient, was his manner and language toward me during those first fifteen minutes after the operation. That and the sudden rush of blood to the cheeks were two of the strongest indications pointing to chamomilla in preference to other drugs having equally strong indications in other cases, but which, being not homeopathic, would have proved equally unavailing and unsuccessful.

On the ability to differentiate clearly between the symptoms in any given case like the above, which plainly point to one remedy, and only one, depends the success of him who attempts to

apply the art of dental medicine in strict accordance with the law of homeopathics or similars.

It was Samuel Hahnemann who said :

“ When we have to do with an art whose end is the saving of human life, any neglect to make ourselves thorough masters of it becomes a crime.”

When we, as dentists, have to do with an art one of whose ends is the alleviation of human suffering, should a neglect to make ourselves thorough masters of it become any the less a crime? The question is one that may well command our thoughtful consideration, and must be answered by every man according to his own best judgment and with such methods as he alone has at his command.

International.

Some have said : “ We can not have inflammation of the dentine, because the dentine has no circulation.” But the dentine is a living tissue, and all living tissue requires constant nourishment, and is constantly giving off waste products.

How is the dentine nourished and what becomes of its waste products? As yet I have been unable to determine. According to Townsend and others, “ We know that the largest of the tubuli are far too small to admit the blood corpuscles, but there is no reason why the blood plasma, or some fluid having like properties, should not enter the tubuli, supply the structure with the necessary nourishment, gather up the waste products, and pass out, by which a circulation is established in each tubule directly connected with that of the pulp.”

If this be true, it is easy to explain why it is that we find the dentine of a tooth in which the pulp has, from any cause, become inflamed so fearfully sensitive. If the pulp be treated and restored to its normal condition the sensibility of the dentine is reduced. As to whether either of the terms, inflammation or hypersensitivity of the dentine, are scientifically correct I have my doubts; of the two, I prefer the latter.

Dr. W. H. Van Deman, in Register.

I have administered the following prescription in neuralgia of the fifth pair of nerves with excellent results :

R. Codeine..... gr. ij.
 Phenacetiu
 Quinin.....āā. grs. xxx.

M. Fint. capsule, No. 12.

Sig.—One capsule every three or four hours till relieved.

D. E. Wiber, D.D.S., Washington, D. C.

SHALL WE RUN THE ENGINE FAST OR SLOW.

Dr. Barbour : I think the best results are obtained by running the engine slowly. Use a smooth running engine, and a sharp bur, bearing on lightly. One has better control of the bur, and certainly there is less friction and less pain than when more pressure is used.

Dr. Lathrop : I have always thought it was best to run the engine rapidly, using a sharp bur and light pressure.

Dr. Field : I heartily endorse what the last gentleman has said. I use a very sharp bur—a dull one I throw away—and run the engine just as fast as I can, just touching the tooth, and lifting the bur from time to time so that if any undue heat be generated, it has time to cool in lowering.

Dr. Moore : I have never been able to satisfy myself that a rapid-running engine was better than one run slowly. I think a fairly good size bur, well sharpened and run rather slowly, with a good pressure, will do better work. Rapid running causes more friction and more heat, and it is the heat I think that causes the pain.

Dr. Watling : It is, I think, a very hard matter to decide which is best to use, a rapid or a slow movement of the engine. I have had a great deal of experience in excavating teeth, perhaps more than anybody else here, and I have never fully decided as to which is better. But I am rather inclined to agree with Dr. Moore. An excavator well sharpened does the work with less pain than the bur. Why? Because there is no friction, and personally I think I prefer it to the bur.

Dr. Parker : I believe that pain is always the result of pressure on some nerve. Which ever method produces the least pressure will cause the least pain. Another element is time. The excavator produces less pressure, and hence less pain, because less time is taken.

Dr. Siddall : Much of the pain felt during dental operations is mental rather than physical. If we have a patient who thinks he is going to be hurt, that person invariably will be hurt. If the operation can only be done so quietly and quickly that he does not realize what is being done, there is not apt to be so much pain. The engine makes more noise than the excavator, and that I believe is why more pain is felt when it is used. I am confident that nine-tenths of the pain experienced is imaginary. Of course, a great many things do hurt, and hurt badly, but generally the pain is mental rather than physical.

Register.

A LEECH WORM.

Speaking of wild beasts, that are at once large, ferocious and African, a correspondent sends us an interesting note about an earth worm. Africa has already produced the largest earth worm (*Microcheta rappi*) known to science, with the possible exception of *Megascolides Australis*, from Australia; but these are giants of a perfectly harmless kind. The worm to which we now refer is said by Mr. Alvan Millson, Assistant Colonial Secretary at Lagos, on the west coast of Africa, to inspire dread among the natives of that coast. Its appearance is against it; the worm is not only large—three or four feet—but it is either of a rich raw beefy color or of a lowering black, the difference of color being a mark of a difference of species. On one occasion a number of natives were collected together, when one of these giants strolled casually into the camp; the result appears to have been a rapid flight on the part of the natives. The reason for the awe-inspiring character of the worm is its reputed habit of sucking blood. It does not seem probable that the most recent results of zoölogical research are known in tropical Africa, but it is a curious coincidence that this research has tended to show that the line of separation between the leeches and earth worms is by no means so wide as it was at one time thought to be. This big earth worm of West Africa inhabits a locality that is remarkable; it does not, as do most earth worms, burrow constantly in the ground, throwing up castings, but lives in deserted hills of termites (white ants).

Natural Science.

It has been said, says C. B. Blackmar, that a dentist should have a tooth filled himself once a week, so as to treat his patients decently—and I think so, too. Dentists generally are not as careful as they ought to be. They forget many times that they are working on living tissue. I think "Painless Dentistry" should be called dentistry with less pain than usual. So-called "Painless Dentistry" I think has done a good deal toward making dentists in general think more about being careful. A patient noticing that a dentist is trying to relieve any little pain, and doing little things accurately, will have confidence in that dentist that when it does hurt a good deal he is doing his best to have it hurt as little as possible. Why, I believe a dentist should try to have his patients have as much confidence in him as is possible.

Register.

GLASS THAT WILL BEAR HEAT.

The new German glass is a new and singular departure in that line. The inventor was led to the production of this compound glass by studying the state of strain in ordinary glass vessels and tubes cooled in contact with air. As a hollow glass vessel, cooled in contact with the air, has its outer skin in a state of compression, while the inside is in a state of tension, it is easily damaged on the inside, but is resistant on the outside; a hollow glass vessel, if introduced when cold into warm air, has its outer skin thrown into a state of compression, but if, when it is hot, it is exposed to cold air, its outer skin is thrown into a state of tension—this being the reason why cold air causes glass to crack more readily than hot air does. The inventor succeeded in throwing the outer layer into a permanent state of compression by covering the glass vessel with a thin outer layer of glass, which has a small co-efficient of expansion. The flasks made of such glass can be filled with boiling aniline and immediately sprinkled on the outside with cold water; glass dishes, too, can be heated over the naked Bunsen flame without cracking. Pressure tubes of this compound glass are also made to meet all the requirements of practice, and have been kept in continuous use on locomotives for five months. *Sun.*

HE SWALLOWED THEM OCCASIONALLY.—One cold, slushy day last winter, a scantily clad but robust individual, entered the office and said: "What'll you charge for a gold crown?" His mouth was examined, and, aside from the bicuspid which he wished crowned, he was wearing two wooden pivot teeth on his upper central roots. They were loose, and he could draw them out at will with a quick motion of his lip and tongue. He said he had worn them so for years. "Well," I asked, "didn't you ever swallow them?" "Oh, yes, I swallow one or both of them occasionally; but I don't mind that, as I have more of them handy." As he spoke, he took a wax card out of his pocket, on which were perhaps a dozen pairs of centrals. "When I first had them put in, they used to get loose, and the dentist charged me for setting them over; but I soon got tired of his bills, and I fix 'em myself now. When my stock of teeth runs low, I go to the dental depot and buy 'em for eight cents apiece. Oh, you fellers can't fool me! I'm a medium; I wear no stockings, rubbers, underclothing or overcoat; I'm out in all kinds of weather, yet I never have a cold. I'm different from most people." And, reader, wasn't he?

Edward Eberle, Hartford, Conn.

NECROSIS, CAUSED BY THE NON-ERUPTION OF A
DECIDUOUS MOLAR.

J. R. Megraw, D.D.S., Fayette, Mo.

On May 21st, a physician, aged twenty-four years, asked advice concerning a discharge of pus from the gums surrounding the second upper bicuspid. The bicuspid and molars were sound, but directly over the root of the second bicuspid there was a slight swelling and a small opening, from which pus was exuding. The discharge had existed for five years, with a dull pain at times lasting from a few minutes to several hours. Probing about an inch, I came in contact with a rough substance which could be moved around about a fourth of an inch. I applied a 20 per cent solution of cocain to the gums, and with a lance made a transverse incision of the gums about an inch long, dissecting it away from the process.

After checking the bleeding, I discovered a molar crown lying length ways, with the top pointing backward. With forceps I removed the tooth and also several small pieces of bone. With a large rose head bur and a rough plug finishing file I thoroughly scraped the bone, syringing the cavity with a solution of listerin, phenol sodique and water, equal parts, then packed the cavity with a 5 per cent iodoform, with directions to change every two days. The cure was complete.

Dr. Taft says: In my own practice during the early days of chloroform I had rather a peculiar experience. A healthy, robust-looking girl came to my office to have some teeth extracted. I called in a physician and she was given chloroform. She seemed to recover all right, but in about fifteen minutes she began to smile, then to laugh, and then to laugh hysterically, and finally she went into convulsions. We succeeded in bringing her out of that condition. But not long after she again began to smile—to me, a most sardonic smile—then came heavy stertorous breathing, and then she fell into a sleep. For three days these various conditions were gone through with. Even on the third day she had two or three slight attacks, but after that she seemed entirely recovered. I think there must have been a predisposition to hysterical condition that the chloroform brought out. But that was in the early days of chloroform, when the drug was not so well known as now.

Register.

Bridge-work will largely increase the revenue of the dentist; but unless it is done well he is sure to reap a harvest in three or four years that will reduce his sense of importance as a bridge-worker, and his faith in its utility, in all but the most favorable cases. It is well for the country practitioner to make as few mistakes as possible. Like Banquo's ghost, they are always at his side. While in the busy whirl of city life, the small fact of a bridge coming loose, or a veneer cracking, would not be considered of public importance; but in a rural community the fact that Mr. Timothy Hoy, four years ago, paid one hundred dollars to Dr. Cannie for a piece of bridge-work, which is now loose, would be considered very discreditable, and so commented on by the whole community, much to the worthy doctor's disadvantage. There are also many places where gold crowns have been used to cover an entire tooth that was not so badly decayed but that a good amalgam filling would have saved it for many years, and in all probability given better satisfaction than the crown. It is not well to do work that brings a large fee when simpler but less expensive methods are equally good. It should be a universal rule in operating to make simplicity one of our leading aims. Many an excellent operator has lost a good-paying patron, and added nothing to his reputation for skill, by putting in an elaborate gold filling in a back tooth when an amalgam filling would have answered all purposes, and saved the unfortunate patient a bad case of nervous shock. The tendency of dentistry to-day is in the easing and making more bearable the patient's hours passed in the dental chair. The beautiful golden creations of Dr. Webb, that took hours to complete, are too exhaustive. None of us care to pass away, aged forty years, as did Dr. Webb. It is simply not a good business way of doing dentistry.

Dr. Bergstresser.

PULPITIS.—Remove loose decay, washing out the cavity with warm water, dry and apply equal parts of arsenic and tannin, finely powdered, and mixed with a syrup solution of cocain and carbolic acid. Retain this with a pellet of cotton over which flow thin cement, gently pressing and wiping off the latter with a wet pellet of cotton. Fill next day, but before removing the dead pulp carefully work the cocain and carbolic acid down to the end of root canals with a Donaldson bristle. It will prevent sensitiveness and hemorrhage.

C. H. Thorn.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

We are in receipt of letters every day, inquiring for locations in this climate. We know of no place at present we can recommend.

Question 166. *Having collected several ounces of old amalgam fillings, what course shall I pursue to recover the different metals of its composition?* An "Items" Subscriber.

ANSWER.—We know of no method that will pay on a small scale. We forwarded five dollars' worth of amalgam waste to a manufacturer some time ago, and obtained fifteen cents per ounce for it. There is certainly little money in this for the dentist or refiner. Separating the metals is the chief expense. Can any one give a method?

In answer to Question 142, I do not think Dr. S. himself could produce a perfect surface of his forms, by following the directions he gives.

In the *Archives of Dentistry* for June, 1887, and on several occasions since, I show how perfect impressions and dies of the papilliform prominences may be obtained.

Dr. W. H. Trueman's plan is practicable, and his suggestion, that the manufacturers make the prominences solid, is an excellent idea, and a step in the right direction to increase the demand for them.

T. C. Barlow, Jersey City.

SUBSCRIBER.—There is much in dentistry and medicine that rests on a basis of experiment and theory. New remedies and compounds are the order of the day; and an unpronounceable name, with a sixteen or eighteen letter extension, is the proper thing, if necessary; but can generally be expressed in a more acceptable English name.

Even our best physicians are unable to pronounce correctly the names of our modern mixtures, and depend on a written slip, which is handed to the druggist.

Dr. Blank advises a mixture of paramonochlorphenol and orthomonochlorphenol, five to twenty per cent solution, for tuberculosis lesions of the larynx; while Dr. Some-one-else prescribes periodohydromethyloxyquinoline for cancer.

Very few dentists can afford to experiment. Some are favored with a practice that can be made somewhat experimental; but even then, our advice is to go slow.

How soon many of these wonderful mixtures, and the men introducing them, slip into the fog of oblivion.

The wonderful elixir of life, that a few years ago was about to revolutionize the practice of medicine—endorsed by our leading physicians, and propped with long three-page articles from some of our most prominent men—burst on us like a summer shower, washed up a little dirt, loosened a few weeds, and when the sun of experience and common-sense was again allowed to shine, the ground became as dry as ever, and that elixir of life floated out to sea.

We are living in the same world that has been floating around for ages ; there is nothing new ; the great men live and die, and failure is too pronounced for the average man to risk his reputation in experimenting.

Try your new mixture, if you still persist, on the family cat or dog, then try it on yourself ; but don't experiment with your patients till you are sure of success, then explain it to them, and obtain their consent.

Question 167. *Is it possible for living snakes and lizards to live in the living human stomach ?*

ANSWER.—When a boy, one of our playmates became quite famous as a snake breeder. One day it was reported that a snake two feet long had been expelled from his stomach.

It had no eyes, and soon died after exposure to the air.

The physicians claimed it had been in the stomach two or three years and that the young man had swallowed the egg, or the snake, when young, in drinking water.

This reminds us of a case coming before a grand jury last year. A ham had been stolen, and one of the witnesses swore he had seen the ham bone floating for a number of days in a water hole at the prisoner's camp. The question came, "Will a bone float ; and how do you know this was the bone of that ham ?" but no one dared dispute the witness. They had all seen bones under water, but this might be a peculiar kind of bone ; and we think these snake eggs that float around in water, and get into human stomachs, are peculiar kind of eggs. The smallest sized snake egg we know of, and especially one that will develop into a two or three foot reptile, is quite a sizable thing to swallow.

This young man was not remarkable in any other way, and claimed no honors in the snake line after he obtained his growth.

Stomach-bred snakes are like sea serpents, they appear at stated intervals, and report places hair, teeth, scales or feet where they will be most useful ; while the size is unlimited.

If any of the readers of ITEMS have swallowed any snakes, or know of any one that has, we will be pleased to hear from them.

This is not dentistry ; but in working around the mouth, we are anxious to know if strange things are liable to happen.

Where it is necessary to put in artificial teeth immediately after extracting, I use this method for the upper. It is very nice where the lip is short and the gum prominent. Fit plain teeth very close to the gum ; in fact, scrape away so they will fit close. From about the second bicuspid I start a narrow strip of wax ; of course this is rubber when finished ; extend it up under the lip as high as you can, the model to be dressed down well here, so it will fit tight, and when the ridge is so pointed that it will not pass over it, I cut it in two, so it will spring over and set close when in place. I have some plates that have been in constant use for about six years, that were put in three or four days after extracting, that still give the best of satisfaction.

E. O. Davis.

PRACTICAL POINTS.

By Mrs. J. M. Walker.

Relief of Pain from Exposed Pulp.—

R.—Carbolic acid..... 20 parts.
Hydrochloral cocain..... 5 parts.
Liquid vaseline..... 75 parts.

Mix. Sig.—Apply to exposed pulp for relief of pain.

A. W. Harlan.

The Gordon White Crown.—Fit band and place on root, standing high enough to meet the opposing tooth. Fill with Parr's fluxed wax, and let patient bite for occlusion. Chill with ice-water, remove, trim and shape cusps. Invert, cusp-end down, in one part white sand, one part pumice and two parts plaster. Burn out the wax and fill with 20k. solder, cut very fine and rubbed up with borax and water. When thoroughly dried, apply blow-pipe heat, and the solder will flow into every part vacated by the wax, giving a perfect solid crown, requiring only to be polished and placed in position.

Gordon White.

Electrolysis to Obtund Sensitive Dentine.—Apply the rubber-dam. To a 12 per cent solution hydrochloral cocain, add equal quantity absolute alcohol. With this, moisten a pledget of cotton and place in the cavity. Press on it the point of the positive pole, and press the negative with a wet sponge on the cheek. A mild current applied twice for three minutes, with an interval of three minutes, will usually permit painless excavation.

F. McGraw.

To Secure a Clamp Which Tends to Rock or Slip Off the Tooth.—Soften sealing-wax, or modeling compound, and mold it over the tooth on each side of the one to be filled, including that part of the clamp which is clear of the cavity.

John Girdwood.

To Replace a Single Broken Tooth for Gum Section.—With corundum wheel cut out the broken portion, following the gum margin. Grind a plain tooth to fit, and attach as in an ordinary case of repair.

R. E. Sparks.

Pulp Capping Paste.—Make a paste of oxid of zinc, with a nearly saturated solution of aristol in oil of gaultheria.

Wm. H. Trueman.

Orange Juice in Pyorrhea Alveolaris.—"There was a little tendency to salivary deposit, but the free use of oranges abated it."

C. N. Peirce.

To Remove Stains of Tincture of Iodine from Hands or Clothing.—Apply strong ammonia. *Geo. A. Maxwell.*

To Alleviate Suffering Incident to Pulpitis.—Apply glycerol of cocain. The glycerol being hygroscopic lessens the volume of fluid contents of the pulp, diminishing the constriction of the arteries and arterioles, the cocain producing, perhaps, arterial anemia. *Henry Burchard.*

Thorough Preparation of Amalgam.—Rub with finger in palm of hand to a dark, pasty mass. Wash at once with alcohol, removing the oxid. When perfectly clean, place on a clean piece of white paper and triturate with a steel blade till a fine, even grain is obtained; then twist in a piece of China silk (which leaves no fibers adhering, as does chamois), and compress well with heavy pliers. The resultant wafer will be as clean and bright and as free from all contaminating elements as gold itself. Squeeze as hard and dry as possible, reserving a small portion of more plastic mass for contouring purposes. *C. Edmund Kells, Jr.*

The Old-fashioned Pivot Tooth as a Modern Porcelain Crown.—Prepare the natural root, and fit to it a platinum and iridium pin. Mark the proper length, and secure the outer end in a suitable "pivot tooth," using melted sulfur as a cement. To cement pin in crown, fill the hole with sulfur; hold crown with pliers and melt the sulfur; heat the pin and coat with sulfur; insert in the melted sulfur in pivot hole, and hold steady till hard. To cement crown and pin in root, heat the root as much as is safe, and smear the inside with melted sulfur. Coat the pin thickly with melted sulfur and press firmly into place, and hold steady a few moments till cold and solid. If ever necessary to remove, grasp the crown with the heated beaks of a small pair of straight forceps, and it will come away readily. *Horace Dean.*

Putrescent Pulp. Disinfection and Sterilization of Root Canal Contents.—Remove all possible, by ordinary methods. Dry out with hot air syringe. With root canal dryer (copper bulb and silver point, the latter tapered as small as finest broach) apply heat sufficient to carbonize, and thus render inert any organic matter left in end of canal. Then flood canal with a solution of aristol in oil of cloves, saturating the heated dry dentine and cementum. If filling be postponed to next day, fill canal with cotton saturated with the same solution, and seal in hermetically.

Geo. Evans.

Pulp Devitalization.—If there has been "toothache," apply a pledget of cotton saturated with

Alcohol.....	3ss
Chloroform.....	3j
Oil cloves.....	9j
Ether.....	3ij
Camphor.....	3iij

Remove after a few moments and apply a pledget saturated with equal parts oil of cloves and carbolic acid. Seal in till following day, to allow all inflammation to subside. Then apply nerve paste, preferably Baldock's. *Frank B. Norris.*

To Renew Separating Rubber When Stiff and Hard.—Suspend in a vessel containing a weak solution of ammonia-water, and it will regain its elasticity. *The Busy Dentist.*

Cement Under Metal Fillings.—The less metal there is inserted in a tooth the better will be the result. Practically replace all the dentine with cement, following its original outlines and enamel with metal. The oxichlorid of zinc produces a beneficial effect on tooth-structure not to be observed as following on the use of oxiphosphate. The oxichlorid is, therefore, always used in this lining process, using gold or amalgam as a reserve only in all deep cavities. *C. Edmund Kells, Jr.*

An Exceedingly Malleable Alloy.—16 parts copper, 1 part zinc, 7 parts platinum. Cover the platinum first with borax, then with powdered charcoal and melt; then add the zinc. Exceedingly malleable; can be drawn into the finest wire, and never tarnishes. *Scientific American.*

How to Use Sandpaper Disks.—Cover them with vaselin; they will not break up so rapidly; their cutting power will be increased; they will never catch in the dam; they are made more flexible, and can be pressed into all depressions and made to cut at any desired point. The fine particles of gold removed in contouring fillings will accumulate in the oiled disks with surprising results when turned over to the refiner. *C. N. Johnson.*

A Desirable Pivot-Tooth.—Use silver for pivot and backing; solder with silver solder; set with thin cement and soft amalgam, equal parts; finish parts exposed to fluids of the mouth with amalgam. *I. L. Hallett.*

Pericemental Inflammation from Collar Crowns.—"I do not believe the collar crown ever is the cause of pericemental in any instance, fit or no fit. Like a cut in the hand, or any portion of the flesh, it is not a permanent wound; it soon heals." *Hungerford.*

GLEANED AT OLD POINT COMFORT.

Local Anesthetic.—

R. Cocain..... grs. viij.
 Antipyrin..... grs. xij.
 Aqua dis..... ʒij.

M. Sig.—Inject 2 to 5 minims in gum for extraction of teeth.
 Operation painless.

H. E. Beach, Clarksville, Tenn.

Alummol for Pyorrhea Pockets.—Four to seven grains of alummol, in twenty minims of water, to which one drop of Ceylon cinnamon is added, injected daily around the roots of the teeth for two or three weeks will cause the pockets to fill up with new growths. Follow this with a dilute solution of trichloroacetic acid daily for another week or more. *A. W. Harlan, Chicago, Ill.*

Formalin.—This valuable sterilizing agent is readily absorbed by water, from which it escapes readily on exposure to increased temperature. It is also absorbed by solids of porous texture whenever the gas again escapes. Thus blocks or balls of pumice, plaster or sand, etc., form a convenient vehicle for its exhibition, and placed in the drawers with instruments, napkins, etc., will keep them permanently sterilized. *Dr. Cassidy.*

Vulcanized Rubber in Bridge-work.—Make and place in position gold shells for the abutments. (If the latter are teeth with long crowns and small necks, extend the shell cap only to the knuckle and avoid cutting away the tooth to get straight lines.) With the shell crowns in position take an impression, bringing the shells away with it. Make a model of sand and plaster. Connect the shells with a strong bar of platinum and iridium, extending the bar beyond the shells for posterior teeth. Wax vulcanite teeth to the bar, and adjust in the mouth for articulation. Invest and vulcanize as usual.

This bridge offers greater resistance to the strain of mastication than soldered teeth; there is no soldering to break the teeth, and there are no crevices for the collection of fluids and food.

L. A. Noel, Nashville, Tenn.

Oxiphosphate of Copper.—A new cement, insoluble in the fluids of the mouth, compounded by mixing black oxid of copper with a solution of phosphoric acid; used in a creamy fluid state. Flowed on the surface of tooth tissue it permeates the tubuli of dentine (and semi-disorganized dentine where thorough removal of the latter is impossible). It arrests the destruction of tissues and corrects sensitiveness. Very satisfactory in stopping cavities in

temporary teeth after very indifferent preparation; also, for sealing up fissures in first permanent molars; also, in the treatment of cavities in the buccal surfaces of molars; no necessity for anchorage. Use in creamy fluid state and not disturb during crystallization. Inject hot water on it as it congeals, which hastens crystallization. Very adhesive to dry surfaces. Capable of great good in "desperate cases."

W. V. B. Ames, Chicago, Ill.

A Simple Regulating Appliance—A vulcanite plate is made to fit the roof of the mouth, and holes drilled through it wherever necessary to tie in bits of soft rubber (rubber tubing answers every purpose) opposite the tooth to be moved, the position of the bits of soft rubber being changed as required. In this simple but very effective appliance there are no wires, no posts, no jackscrews, and nothing rough in the mouth.

H. D. Boyd, Troy, Ala.

A Removable Tooth Crown.—When ready to place the crown in permanent position, coat the post with chloro-percha. Fill the canal with oxiphosphate and send the crown home. If necessary, from any cause, to remove the crown, it is easily done by heating the crown with any suitable instrument till the post is warmed and the film of gutta-percha softened.

Geo. Evans, New York, N. Y.

To Start a Large Gold Filling.—With sandarac varnish hold in place in the bottom of the cavity a large pellet of gold, into which work strips of gold, relying on this only for a start, but not as a substitute for proper anchorage.

W. G. Browne, Atlanta, Ga.

Immediate Root Filling.—Cleanse the canal thoroughly, and fill the canal with yellow wax, using a root-drier to melt the wax in the canal, and force a lead point home into the melted wax.

R. R. Freeman, Nashville, Tenn.

Gold Lining for Rubber Plates.—On a sheet of No. 20 soft foil, crystals of pure gold of varying size are deposited till the completed lining is about No. 50 to No. 60. The invested model is first varnished with sandarac varnish, and then with Damar varnish, to make the gold adhere to the plaster model on which it is adjusted in small sections, each one overlapping the other sufficiently to avoid any gaps being created when the rubber is packed over the gold lining. The piece is vulcanized as usual, greater density of the rubber being secured by the use of the metal lining, and almost absolute cleanliness of the plate made possible.

John A. Daly, Washington, D. C.

ITEMS.

Be such a man, live such a life, that if every man was such as you, and every life like yours, the earth would be God's paradise.

Phillips Brooks.

* * *

I have been very much gratified with the results of sulfate of atropin given hypodermically on the motor system in shock.

Dr. Carrow.

* * *

I never allow a physician to give chloroform in my office but in his, and if anything goes wrong, or unpleasant happens, or the patient dies, the victim is in the physician's office and not mine. The physician has the whole responsibility.

C. B. Blackmar.

* * *

For an excellent varnish, procure a piece of clear amber, scrape or powder it, dissolve in Squibb's chloroform, which will take some time, add a little absolute alcohol to delay evaporation, and you have a varnish so hard that it will resist almost anything.

C. F. Ives.

* * *

Nothing so elevates as the companionship of good books. By them the frets and worries of professional work are lost, while they tend to elevate our lives to the plane of our authors. This is a refining influence that can be enjoyed by all, even when early life was barren of all opportunities for culture and education. All improvement a dentist receives from books is sure to be seen in his manner and conversation; not in the snobbish sense, but in gentility and good breeding. A man of this class is bound to bring around him people of kindred nature, and it will not be necessary to advertise for their patronage.

Dr. Bergstresser.

* * *

ROOT FILLING.—Assuming the roots have been properly prepared, dry each canal thoroughly with hot air. Inject, by using through a hypodermic syringe with platinum needle, one or two drops of a saturated solution of hydro-naphthol or iodoform, with chloroform. Heat the end of a small burnisher, and on this fix a gutta-percha canal point; place the point in previously saturated canal, and force it home, where it will dissolve; follow with another, and continue till the canal is thoroughly filled.

D. E. Wiber, D. D. S., Washington, D. C.

DRYING ROOT-CANALS.—I keep two sizes of the Evans' silver points, with copper bulbs. I use only the smaller in very small canals, but the large one first, and then the smaller in ordinary canals.

C. H. Thorn.

* * *

Nitrate of silver stains are more easily removed by rubbing with a small piece of iodid of potassium, moistened with water, than with iodid and ammonia.

C. H. Thorn.

* * *

On page 493 of August ITEMS, W. O. Robinson takes me to task for recommending cyanid of potassium to remove nitrate of silver stains. From time immemorial photographers have used it to remove the stain from their hands, and I would like to ask him, Did he ever hear of its injuring them? Of course, it could not be used in the mouth.

A. J. Thompson, St. Paul, Minn.

* * *

It has been common to secure drainage of the antrum, to extract teeth or roots, and drill perpendicularly through the alveolar process. As has been shown, the antrum cannot always be reached in this way. From the studies before referred to, both Dr. Fletcher and the author had independently reached the conclusion that the best place to open the antrum was at the base of the malar process, midway between the roots of the second bicuspid and first molar. In this position the lowest point of the cavity is nearly always reached, and the possibility of entering the nasal cavity avoided.

Dr. Talbot.

* * *

KILLING AN ABSCESS.—Dr. J. D. Adair describes the method of using the potassium sodium preparation of Dr. Emil Schrier, and reports very satisfactory results in a number of cases. In one case he had vainly treated for six or eight weeks abscesses of three superior incisors, which were to receive Logan crowns. As the young lady had to return to her home in Baltimore, he concluded to make an application of the preparation and fill the roots without further delay. There was still pericemental tenderness with pus constantly present. The Logan crowns were put on at the final sitting. It was five months before he heard from the case, and then he was greatly rejoiced to learn that the abscesses had given no further trouble and that the teeth were in every way comfortable.

It is now ten months since the crowns were put on and they are still perfectly satisfactory, having been heard from several times during the past five months.

Dental Science.

THE FOLLOWING IS IMPORTANT.—Did you know that pyrozone is a dangerous material to handle? My partner, Dr. A. M. Markle, while opening a bottle, with his usual care, had an explosion. A piece of glass entered his right eye, and came very near destroying the sight. Have you ever heard of a similar case?

L. P. Haskell.

[This is probably the 25 per cent preparation, which is quite explosive and should be handled with care. The heat of the hand evidently caused the explosion. We have heard of other cases.—ED. ITEMS.]

* * *

Our environments have much to do with a successful practice, cleanliness is indispensable, and this means all approved antiseptic methods. But there is something outside of that. Some dental offices give more the impression of a machine-shop than a surgery. The fewer the implements of your art that are in sight the better the effect of the first impression made on your patient. It seems as if the tendency to machine methods in dentistry is becoming extreme. How many contrivances there are for the impaction of a gold filling, yet not one of them exceeds in speed or effectiveness the old hand mallet.

Dr. Bergstresser.

* * *

I have a case which proves the adage, "Necessity is the mother of invention."

The patient, a little girl, aged about eight years, with enamel undeveloped on lower third of left upper lateral. She was very anxious for a gold filling, as the tooth looked so badly.

I cut the tooth away till I reached the enamel, prepared a cavity and built down with gold, though I found the enamel very frail. In polishing the filling I used too much force, and broke the posterior wall, thereby loosening the filling, the anterior wall remaining intact.

As my patient wished to go to a party that evening, and not having time to refill at that sitting, I filled the cavity with cement, and pressed gold on to the surface, telling her I would try again to make an all-gold filling another day. That was last March. I have seen the tooth several times since, and find the gold plating and the cement firm, so concluded to "let well enough alone." This same patient had both lower sixth year molars in the same condition and extremely sensitive. I used nitrate of silver, which has overcome the sensitiveness and hardened the dentine so that she uses them with perfect comfort.

F. L. Browne, Evanston, Ill.

PLIERS FOR LIQUIDS.—Dr. Randell Barrett, of Norfolk, Va., notes the readiness with which a little liquid, as alcohol, for instance, may be caught between the beaks of a pair of plugging-pliers, carried to a tooth-surface or cavity, and by simply opening the plier-beaks be deposited as a single drop. He suggests the greater facility with which a larger volume of liquid can be included within suitably half-hollowed or semi-cylinderead beaks. The Jamison pliers will serve to demonstrate the suggestion, and it is somewhat surprising to observe the up-hill flow of the liquid as the pliers are opened, for example, on the coronal surface of an upper molar.

Cosmos.

* * *

When a patient has taken the chair, it is inconsiderate to try to entertain him by the discussion of politics or religion. Neither is it necessary to try to play a comedy part like an Indian medicine-man, and generally doing it as bunglingly, too. It is well to do as little talking as possible, but to show by our attention that our sympathy is with the patient. A kind word of encouragement now and then will help out amazingly, when a stream of garrulity would only disgust. Only sharp burs should be used in our work, and if we cannot afford another item of expenditure, the least economizing should be on engine burs. Work can be done so much more rapidly and painlessly that it is money in the pocket to keep well supplied with these indispensable implements.

Dr. Bergstresser.

* * *

In August ITEMS, page 490, "Practical Points," Dwinelle says: "To increase the density and hardness of amalgam fillings, excess of amalgam from previous operations may be used for further filling by heating over lamp till mercury volatilizes." I am not sure whether he means only to use this for facing newly-prepared amalgam or for the entire filling. If it works in one it will surely work in the other. The process of heating and using, as far as I can see, is simple, but am obliged to say that in several cases where I used "previous excess" as indicated, I lost the fillings and most of the patients, as the fillings did not harden like newly-prepared amalgam, but remained crumbly, like dough, and came out.

E. W. Wagoner, Emporia, Kansas.

[This item ought not to have been allowed space. It will be disappointing to every one who attempts to follow its advice.—
ED. ITEMS.]

EDITORIAL.

COLLECT PROMPTLY.

"If I could collect my bills promptly," said a dentist, the other day, "I should be all right; but now I have to be in debt to the grocer, and the merchant, and the dental depot continually, because I cannot collect my bills."

There is some truth in all this, but it shows as much looseness in the dentist as in his customers. Our business is what we make it, and there is nothing so pleasant and easy as paying as you go.

The first year I was a dentist I received three hundred dollars and charged eight hundred; and because I was so "liberal" in giving credit, I had many patients from the flood-wood of society. The second year I quietly made a change. Before doing the work for a patient, I took an estimate on a chart of what I proposed doing, and of its proximate cost, but intimated that *I wanted no money till the work was done*. When the work was finished, I gave my patients the hand-mirror, and compared the work with the chart, and any work added by their consent, so that they might see it was all right, and I might see it was all approved. If, after my intimation before I commenced, they now wanted credit, of course I was sorry I could not give it, for really I kept no books. If from any peculiar circumstances they still wanted time, and it was any considerable amount, I would give them perhaps three months, but was pretty sure to look after it at that time. By using these precautions, their bills were seldom disputed, seldom became old, and seldom complained of.

I believe this course gave me a better class of customers, and I gave better satisfaction; for patients are not as apt to complain of work that is paid for as of that which is not; and when more work is needed they will not go to another dentist because they are ashamed that our last bill is not settled.

If you find a patient cannot, or will not, pay what he owes you, give it to him, and do it in such a frank way that you will make him your friend again.

OBSERVE, DIGEST, CONCENTRATE, ACT.

Triflers with diamonds under their feet, see only useless sand; spendthrifts, with handfuls of pearls, think only of vanities; lazy men, with golden opportunities within reach, accomplish nothing. Oh, so many are interested with gew-gaws, while a world is offered them; they reflect on nonsense, while the stupendous problems of life are proposed to them; they trifle with a thousand bubbles, when one sensible pursuit would bring them riches, and honor, and glory. How they while away their precious time lazily when action would give them substantial good.

Talk about this world being in confusion and ruin; there is nothing wrong but man. If we trample on evil, and observe the good; shut our eyes on man's follies, and reflect on God's wonders; dismiss vageries, and seek true riches; if we cease busying ourselves with vanities, and become filled with good deeds, then this world within us and without us is a delectable field of transcendent sublimity, from which we may draw, and concentrate, and digest power to become what we will, and accomplish what we will, till we burst this cumbrous clay, and soar away to higher spheres.

But stop. Don't fly yet. Right where you are, and as you are, do what you can with what you have, and what surrounds you; this will make you what you would be. You cannot become what you may be by mere impulse, nor by some great leap, and you have no wings. Men grow; they do not fly till they are transformed into angels. They come to their best attainments here step by step—carefully observing, thoroughly digesting, wisely concentrating on the most important, and then deliberately acting with enthusiasm and intelligence. Thus we gather the crudities about us, and convert them into priceless values, and by using them wisely we may attain something approaching our ideal of life.

What business man succeeds without this power to wisely observe, digest, concentrate, and act? With these qualities few fail. This secret charm and strength is a talisman of prosperity. These four spirits of diligence strew on our path the aroma of

health, the gold of wealth, and the precious gems of happiness. Honor and wisdom and triumph follow in their steps.

Teach a young man how to observe, and how to digest what he observes, and how to make use of what he digests; teach him how to make this his life habit, and you may leave him to himself. They will be sure to make him something worthy of his being. They are better than money—yes, than a whole mine of gold. He will be sure to create something from nothing that will improve the world; and in improving the world he will improve himself, till head and heart are centers of the strength and perfection of life. He has a key that opens every door, and makes him welcome wherever he wills to go. The hidden recesses of nature become familiar to him; the intricate problems of life are solved, and the most delightful associations are his home.

Christ says the heart of the pure is such a clear, beautiful, well shapen lens that the possessor can look through it and see God. So here we have a compound lens through which the possessor can see the glory of the world and possess it. It gives us eyes to see, powers to appropriate, skill to manipulate, and wisdom to act as a monarch of all we survey. Having this, we can see flying all about us glorious possibilities—embrio worlds for our development, wonderful possessions that bring with them the power to transmute misfortune into fortune, dire defeats into triumphant feats, and poverty into riches.

Dr. Bergstresser says in another journal:

“Flowers are as essential in a dental office, for their influence is so marked on patients of nervous organization and esthetic taste, that they are superior to any local anesthetic advertised in the ITEMS OF INTEREST.”

Isn't that a poser? That sentence is as bright as it is grammatical. “Flowers are as essential—that they are superior to any local anesthetic.” Whew, what editing! And yet we know the editor is a perfect model in English composition. But this time he laughed so heartily at the joke on the ITEMS he could not see the bad grammar.

What a terrible dis-tresser a local anesthetic is to this Dr. Berg-stresser. He declares pitiously that "many dentists have been forced into the use of local anesthetics by a misguided public and disreputable dentists." Now, don't mind the bad grammar, for he is in such distress; for he says it is just awful to see "the many luring advertisements in our *local* journals and the floods of circulars coming to every dentist." But just before he goes into spasms he takes a whiff from his flowers, and though they "are superior to any local anesthetic," he adds "we hear so much about painless extracting in these days that one is in self-defense obliged to use a local anesthetic." And before he is through with his essay he actually admits he uses one himself.

We regret the non-appearance of the proceedings of the Southern Association last month. But it was unavoidable, on account of not having received a portion of the first sixteen pages. We held the pages open for them till our last day; but was obliged to go to press without them. We are informed the missing sheets were in the hands of the S. S. White Co., whose reporter was sick. We are in hopes the whole proceedings will now be published without interruption.

Utah has now a dental law. It provides for the registration within six months with the county clerk of all now practicing, and the legalizing of all others by satisfactory examination before the State Board and payment of ten dollars, and registration of certificate with the clerk of county where practicing. Those now residents must send to the State Board a sworn statement of their status, with a fee of one dollar. A diploma from any dental school recognized by the National Association of Dental Examiners is taken in lieu of an examination. Between sessions of the Board one member may give a temporary license. A neglect to register a certificate within six months of its grant, forfeits it, and a new one costs twenty-five dollars. Any one practicing illegally is fined from fifty to three hundred dollars, or imprisonment from one to six months, or both.

A rather singular criticism was recently made on our abbreviations of *Mss.* for publication. "You even leave out the *up in upon*, and several times in my manuscript you strike out 'in order to' 'in case of' and 'for the purpose of,' etc. Now, to my mind, these are essentials, and I object to such mutilations."

With most oxiphosphates it has been found necessary to keep the powder well corked, and to have the fluid fresh. Our experience shows that if it is properly prepared, the ordinary conditions of the atmosphere will not affect the powder, and that the fluid will not deteriorate. Such oxiphosphate may be mixed even hurriedly, without any fear of its crumbling, and it does not set so quickly as to be an embarrassment in using. It is so resistant to disintegration by saliva that a ball, though mixed soft and immediately taken into the mouth, will not dissolve or even lose its polish.

Another close call for the reputation of a dentist. Who will dare now to use a local anesthetic? The other day a lady entered my daughter's office to have a tooth extracted, and she had not gone three blocks from the office before she fell dead.

"That's what cocain does in extracting a tooth," said one.

"Yes," said another; "I heard her say just before she entered Dr. Slade's office that she had come six miles to have her tooth out without pain."

Just then Mrs. Slade, seeing the commotion and hearing the report that it was a death through her anesthetic, said that could not be for she was not in the office. Then it transpired that when the patient called she was informed that the doctor was not in, and that she replied that she would do another errand and call again.

That would have been a sure death from a local anesthetic if Mrs. S. had been in her office.

At the Southern Dental Convention, after eight dentists had tried with forceps and elevators to extract a root for a patient, unsuccessfully, he became indignant, saying, "I would rather go to an office and have a regular dentist take it out." But finally he was persuaded to let a lady dentist try, who quickly and very dexterously removed it. "Ah," said the young man, "you men are no good."

HINTS.

Dr. Abbott says, "No tissue is normally sensitive, but when irritated it becomes sensitive." We think this is a mistake.

* * *

Dr. Frederichs says his finger nails are sensitive if cut very close to the flesh. We think not.

* * *

Dr. J. S. Moore, of Contra Costa, Cal., died July 26th, last, sixty-two years old. His prominence in dental and religious circles is too great to be confined to the local notice of Contra Costa. He will be remembered favorably in his native State of North Carolina, and as a teacher in Virginia and Texas.

* * *

Dr. Sweeney says there is an universal complaint that dental laws all favor dentists already in practice, and are hard on those who want to begin practice or to go from one State to another. There will be, there must be, a change in these respects. A diploma from a reputable dental college should entitle one to practice without further examination.

* * *

President Eliot, of Harvard, is quoted as being strongly opposed to the excessive time which is given by many students to athletics. In a recent address he advised students to apportion their day thus: Sleep, eight hours; meals, three hours; exercise, two hours; social duties, one hour; study, ten hours; Sunday, no work.

* * *

Dr. Barrett says, "Normal dentine is not nervous tissue, though it may retain the unorganized elements of nerve supply." But there is no sensitiveness where there is no nerve. But Dr. Barrett replies, "Healthy dentine is never sensitive." We think it is often. He believes sensitiveness is from inflammation of the protoplasmic elements.

* * *

Every dentist should try to economize by laying aside some part of his income every year. It is not possible in our work to accumulate a great store of wealth, but each one of us should at least endeavor to have a home clear of incumbrance and a comfortable

sum of paid-up life insurance. The dentist's time of usefulness is more limited than that of the learned professions. His hand has lost its cunning and his eye its clearness, and he is incapacitated at a time of life when the lawyer or minister can still claim many years of usefulness.

* * *

Crowning Front Teeth.—Ream out the root-canal and fit a post. Fit to the abutment of the root a small plate of platina, a long oval in shape, projecting beyond the proximal and palatal sides, and with a suitable die stamp a small countersunk hole to fit the enlarged mouth of the canal. Fill this countersink with pure gold; cut screw thread on the post, and screw it through the pure gold in the countersunk hole, and fasten it in place by melting the gold around it. This secures the pin firmly in place in the cap. Snip and bend back the projecting portions of the plate, annealing as needed, to form a collar; no metal being presented at the cervico-labial margin. A piece of platinum is fastened on the ridge cap with shellac, and backed with platina, 32 g., perfect continuity of all sections of the crown being secured when the soldering is completed, while all the strength of the regular crown is obtained.

George Evans, New York, N. Y.

* * *

Personal appearance has much to do with professional success. A careless and untidy dentist can never hope to secure the patronage of those who demand the higher grades of dental work. The day is at hand when soiled linen, dirty hands and finger-nails are intolerable. Any financiering that includes a curtailment of soap, laundry bills and barbers' services, will react on the financier.

A recent traveler from Australia who visited this country, made the observation that Americans appeared to be very particular in keeping their nails clean. It is probably just as well that he did not run across some of us dentists after we had gotten through with a big lot of plate-work, or the complimentary notice might have been withheld as a general statement.

External neatness is important, but the ideal dentist should also be pure in life and mind. Morality is more of a necessity from a business point of view in our profession than in any other, not excepting the gospel ministry. Some of the most skilful dentists have fallen in disrepute in their communities so that no respectable woman could be induced to enter their offices.

Dr. Bergstresser.

FOR OUR PATIENTS.

TO MY DENTIST.

By a Child.

How I love thee, dentist mine!
Was there ever power like thine?

Power to draw—when aches betide—
Helpless victims to thy side.
Power to draw—with nerve and grace—
Molars from their resting place.
Power to draw—by word and look—
Dollars from my pocket-book.

How I love thy toil-grimed coat,
Cottonoid and creasote;
Drill, and bur, and rusty file,
And, above them all, thy smile!
I have never seen thee frown—
Thou shouldst wear a golden crown.

Meek (?) and gentle (?) as a lamb,
Thou art always saying "dam."
And with "cus" thy speech is fraught,
"Pid" is but an afterthought.
Answering patients as they come,
I have heard thee say "by gum!"

Thy sweet antiseptic laugh
Makes men's sufferings less by half.
When for clemency they pray,
'Tis a treat to hear thee say—
"Ah! EGG zackly!" Then—sweet dreams,
While thy dental engine screams.

A. Phule.

Some people seem to rake up all the sorrows of the past; to them they add the burdens of the present; then they look ahead, and anticipate a great many more trials than they will ever experience in the future; they tie them all together, swing them across their shoulder, and go reeling and staggering through the world with the accumulated load. If they should come to a warm religious meeting, they lay their burdens down for the moment, and say to themselves, "What a refreshing time we have had!" but no sooner do they leave the pew than the old load of trouble is shouldered, and they are as downcast as before.

Moody.

WHAT QUEER THINGS WE ARE.

Two men were riding down town one morning recently in an elevated train. The man with the silk hat had made a discovery, and he questioned his friend thus :

"Are you right-handed?"

"Yes," said the man in the top coat.

"Right-legged, also?"

"Right-legged; no."

"Sure?"

"Why, of course I'm sure. I have more power and accuracy and dexterity in my right hand and arm than in my left hand and arm. But as for my legs, I can and do use one the same as the other."

"How about your ears?"

"Same as legs."

"Eyes?"

"Each equal to the other in all respects."

"Sides to your jaws?"

"Why are you asking me such questions? If there's a joke in prospect, let's have the laugh now."

"No joke. All sincerity. Wanted to know how well you knew yourself. See you're very slightly acquainted. Just watch yourself for a few days. The proper study for mankind is—good-bye, here's my station. You'll be the most surprised man"—"Step lively, please," called the guard—"in the world." And the inquisitor just managed to get out on the station platform as the iron gates banged behind him.

"You're right," said the man with the top coat, a couple of mornings later.

"Told you—"

"Dead right. I've kept tab on myself. Noticed when I used the telephone I always put the receiver to my right ear. Tried my left ear, and got all mixed up. Found I always put my left foot first into an elevator, and always took the first step with it when I went up or down stairs. Started to go down some steps with my right foot leading, and nearly had a tumble. Then I'm right jawed. I always chew my food on the right side of my mouth. Never thought of it before, but things do not taste so good on the left side. They do not taste so much either. Queer, isn't it, how the sense of taste will become more highly developed in one part of the mouth than in another by use and force of habit? I'm left-eyed. You know, I'm interested in botany, and use a microscope

a great deal. Well, I invariably look through the instrument with my left eye. For ordinary purposes my right eye seems to be as keen as the left one, but I found that it was not at all satisfactory when I applied it to the microscope. I'm right-handed, left-eyed, right-jawed, left-legged and right-eared. I suppose I'm right or left in a good many more things, but I haven't had time to discover them yet."

"What queer things we are!" said the man with the silk hat.

New York Tribune.

IMAGINATION.

Dr. L. E. Custer.

Imagination is a subjective faculty. We have to deal with a mental activity. The impressions are brought to the mind of the patient through the several senses and the pain felt through these agencies is, for the time being, most real; the sense of sight, for instance. A grand display of instruments in a dentist's office is all very well in its way. Such instruments enable him to do excellent work and are essential, but they should be kept out of sight of the patient. The sense of smell has its influence, too. The odor of iodine, for instance, will bring to the mind of the patient painful memories; the odor of carbolic acid and creasote have a like effect on the minds of some patients. The sense of hearing is another agency through which imaginary pain is felt. I think that in the case of ladies, particularly, who are accustomed to the quiet of the household, the pain is aggravated by the noisy surroundings in a dentist's office.

Personal magnetism should be exercised as much as possible by the operator. He should treat his patients as though they were living, sensitive human beings. He should inspire them with confidence in himself and his ability to perform the required operation. He should keep them as quiet as possible, and guard against all irritation to the senses of sight, hearing and smell. *Register.*

QUACKS AND PAINLESS DENTISTRY.

Dr. C. B. Blackmar.

Last summer I saw a patient undergoing an operation by a dentist using a so-called "Painless Process." She said it did not hurt. Her friend with her, a patient of one of the best dentists in Detroit, said to her as she sat in the chair, "Then I am going to ask Dr. — if he uses anything now, he never did for me before." This Detroit dentist's answer to her a month later was that it was

a fraud, a fake, a humbug ; that there was nothing one could put into or around a tooth that would make it hurt less when operated on. Now, if this statement is so, I am surprised that this subject should be even mentioned by Dr. Hoff at our State meeting, for we are not supposed to discuss fakes.

Dr. Case once told me that it was a fact that so-called quacks were the first to "catch on to" new remedies and schemes before the regular practitioners did, and these remedies would generally be called fakes at first. A patient told me this summer that she had cocain applied to her gums in New York City in 1885 to relieve pain from ligatures, etc.

When was it first taught in our dental colleges? Why is it that young dental graduates do not know about some of these things, or all of them, before the quacks, so-called? I think they should be ready to meet them, instead of being annoyed, and made to cope with them.

It has been said that people who are ill often get well by the aid of medicine. Some get well without any medicine, and others get well in spite of medicine, and so it is in regard to diseased teeth, that some are filled painlessly by the aid of medicine, some without any medicine and others in spite of medicine, and some are cleaned out and filled with a good deal of pain in spite of all we can do, at present, to avoid it. And some patients are so sensitive in regard to their teeth that scraping on the rubber-dam clamp causes them pain. Obtundents for sensitive dentine are of little use in such cases. However, it is a fact that some drugs rightly used will obtund sensitive dentine, so much so, at least, that the extracting can be done with less pain than without, and patients will often say that it was entirely painless, even when, before operating, the cavity could scarcely be touched without pain.

HOW METALS GET TIRED.

Fatigue of metals is an expression which has come into use only in recent years, and it describes a condition of the material not previously understood. The expression stands for a straining of the relationship to each other of the molecules of which the metal is constituted.

In the metals, there is a point in their resistance to pulling, bending, or crushing, known as the elastic limit, the point at which permanent strain commences. The elastic limit of iron or mild steel, for example, in its normal condition, is reached, roughly speaking, when about half the breaking load is applied. If the

stresses brought to bear on a piece of metal are within this limit, it will sustain these stresses without injury, however long they may be applied. If the stresses exceed the elastic limit, in however small a degree, fatigue of the metal will result, and if they are continued, breakage will inevitably take place. To guard against accident from such insidious fatigue, it has now become usual, in the best practice, to withdraw permanently from use parts of machinery, such as railway crank and carriage axles, on the soundness of which the safety of many lives may depend, after they have performed a certain number of revolutions, even though no flaw or sign of injury can be detected.

If, however, metals are strained beyond the elastic limit, but not broken, and if the straining is not continued, the material will recover its elasticity by rest alone. Some years ago Prof. B. W. Kennedy demonstrated by many experiments the recuperative property of metals after fatigue. Bars of iron and steel, strained in a testing-machine beyond the elastic limit, and so weakened thereby that if they were tested again the following day they would take permanent set at one-third or less of their former load, would, if allowed to rest for about two years, be found not only to have recovered their original elastic limit of strength, but to have exceeded it, and to have become stronger than before in the direction in which they had been pulled. If the period of rest was materially shortened, the restoration of strength was found to be incomplete.

D. S. Smart, in Knowledge.



Dr. Joseph Parker, of London, says: "He who appreciates the good in those about him, does the most good." The reason of this fact can be understood by any one who knows his own heart; it is only those who can see and acknowledge the good that is in us who can influence us largely for good. And this rule applies with still greater force in dealing with children. It is only by recognizing their good qualities, their good intentions, and their efforts to do right, however spasmodic these may be, that we can win their confidence and secure their cordial coöperation in efforts to overcome their faults. It is absolutely necessary to the right development of our own characters to cultivate the habit of looking for, and stimulating as far as we may, the good qualities of those about us. It is God-like to see the germs of good in men; it is devil-like to see only the evil that is in them.